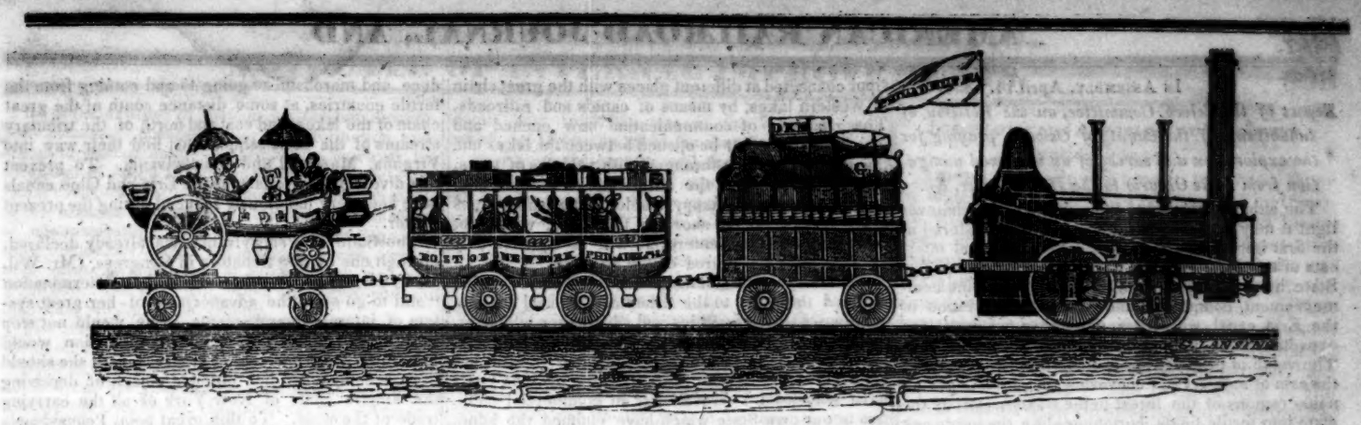

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, DECEMBER 27, 1834.

Wm. M. C. upon Undulating Railways, is received, for which he will please accept our thanks. It will find an early insertion.

The communication of W. L., upon Suspension Bridges, is received, and will be attended to as soon as we get through with the long documents on hand. He will, we trust, continue them.

The proceedings of the New-York and Erie Railroad Convention, held at Bath on the 17th inst., have not reached us yet. We were in hopes to have received them in time for this number.

In this number will be found the report of a select committee of the New-York Legislature at its last session, and an interesting letter from Judge Wright, upon the subject of an *enlarged* or steamboat canal, from Lake Ontario to Utica, and of course to the Hudson river.

We continue this week our extracts from the Edinburgh Quarterly Review, upon the utility and importance of Railroads. It contains much of the right kind of information, and it is given in such a manner as to convince those who take the trouble to read it; and it should therefore be extensively circulated in the interior of this State, especially in the vicinity of the route of the New-York and Erie Railroad.

It shows conclusively the great advantages of a Railroad to a *grazing* country; and emphatically such will the southern part of the State of New-York become, when there shall be an easy and speedy access to market.

It may not be generally known, yet from this article it will be readily perceived, that the supply of MEATS, as well as of butter and milk, will be of a much better quality, when transported on a railroad, than in any other way; so with vegetables; and at the same time the supply will be much more abundant and consequently cheaper. To this city, then, as well on account of the comfort and health of its inhabitants, as for their pecuniary interest, is this railroad of great importance; and to our citizens does it especially commend itself.

From the Lycoming (Pennsylv'a) Chronicle, we learn that a meeting was held at the court-house in that county, upon the subject of the Elmira (N. Y.) and Williamsport (Pennsylv'a) Railroad. It was there stated that a "gentleman in that county had received a communication from the Philadelphia Chamber of Commerce relative to that road." Thus it seems that our neighbors in Pennsylvania are resolved, not only to intercept the western trade, by connecting their works with the Ohio canal, and with Lake Erie at the town of Erie; but to hit us under the fourth and fifth ribs, also, by connecting with our own canal and Lake Ontario through the Cayuga and Seneca Lakes. Very well, when they have accomplished both of those works, they will undoubtedly permit us to pass through their territory to Ohio, with our great western Railroad, so that New-York may at least enjoy the trade of the west when it cannot go to Philadelphia.

When will New-York, like Pennsylvania, arise in her might, and say, We will, at least, enjoy all the advantages we possess,—if enterprise and perserverance can ensure it.

THAMES TUNNEL.—The Liverpool Albion says, arrangements have been made to resume this great work. That the portion already completed, even after the suspension of six years, is in a state of perfect preservation.

It is rumored, that some very important discoveries have been made by Dr. Nott, in the construction of steam boilers and furnaces.

Railroad from Lynn to Boston.—We are informed that arrangements are in progress for forming a company, to establish a Railroad between Lynn and Boston.

We observe that a Convention of the citizens of Western Pennsylvania is to be held at Butler, on the 34th instant, for the purpose of devising means to insure the completion of the Pennsylvania Canal to the town of Erie. This work will, of course, open a direct communication between Pittsburg and Lake Erie. The Sandy and Beaver Canal, which will connect the Ohio State Canal with Pittsburg, will also open a communication with the Lake.—The latter was commenced on the 25th ult. The Beaver and Mahoning Canal is another work whose object is to unite the Ohio and Pennsylvania Canals, by a route nearly mid way between the two already named.

The following extract from the Report of the Chief Engineer, relates to works in, and connected with, this harbor:

Fort Hamilton, Narrows, N. Y.—The slight defects in construction, always to be expected in a work of this magnitude, have been repaired, and the fort may, by the end of the present year, be considered as finished.

Fort Lafayette, Narrows, N. Y.—A portion of the unexpended balance remaining on account of this work, has been applied to the repairs of the sea wall. This became necessary in consequence of the failure of the mortar with which it was pointed, and the settling of the wall in many places.

Fort Columbus and Castle William, Governor's Island, New York Harbor.—The report of the Engineer charged with the repairs of these works, is highly favorable. In the former, the scarp walls, except the pointing and parapets, have been finished; the counterscarp revetments, and revetments of the glacis, are nearly completed. The facing of the covered way revetment, leading from Fort Columbus to Castle William, will be done this Fall. The masonry of the magazines and barracks, as well as that of the communications connecting the former, is finished, as is also the facing of the *redan*. All the masonry of the barracks on the south, west, and north fronts is nearly finished, and the roofs are in readiness to receive the covering; the masonry of those on the east front is in a state of forwardness. Measures have been taken to finish the repairs of Castle Wiliam as speedily as practicable.

Fort Schuyler, Throgs' neck, East river, N. Y.—Agreeably to your instructions, the operations on Throg's Neck have been limited to the making of such arrangements as will ennable the officer charged with the construction of this fort to prosecute the work with efficiency during the next working season. The most ample preparations have been made. A permanent wharf will be in readiness by the time it is required: the necessary boats and machinery have been provided; an ample quarry, of good quality of stone, prepared, and indeed every thing that may tend to expedite the work, when commenced, will be found in waiting.

In Assembly, April 14, 1834.

Report of the Select Committee, on the Petition of Inhabitants of the County of Oswego, praying for the exploration and survey of an improved navigation from Lake Ontario to the Hudson river, &c.

The subject referred to the committee, in whatever light it may be viewed, may justly be considered of the first importance, both to the enterprize and interests of the State of New-York. The citizens of this State have witnessed with high satisfaction the commencement, completion, and successful operation of the Erie canal, which has more than answered the expectations of its ardent and patriotic projectors. The value of property has been multiplied many fold; the arm of industry has converted the almost interminable regions of the forest in the western part of the state into fertile fields, enriching alike the hardy cultivator and the great commercial emporium of the State; cities and villages have arisen, as if by enchantment, where, but for the Erie canal, would now have been a wilderness. Great and important have been the results of these works of internal improvement, not only to this state, but to a portion of the territory bordering upon the basin of the great western lakes. Let it not be supposed that the resources of western New-York are exhausted, or that she has arrived at that point in commercial and agricultural enterprize beyond which she cannot and will not pass. The spirited and enterprizing citizens of that section of the State are now calling the attention of the Legislature to the construction of a canal from Rochester, up the valley of the Genesee, to Olean on the Allegany, the distance of 96 miles. Another project of equal importance is now in contemplation to unite the fertile regions of the north with the valley of the Mohawk, by means of a canal from Rome to the high falls of the Black river. Complete the Chenango canal and the improvements already commenced, double the locks upon the Erie canal east of Syracuse, construct those canals in contemplation, and your committee confidently predict, that in ten years the Erie canal will not be adequate to the business of our own State, and the products of the west will be forced to find an outlet to the Atlantic through some other channel.

Three great objects were primarily contemplated in constructing the Erie canal; First, to furnish the citizens of this State with an easy and cheap conveyance of their surplus produce to market; second, to secure and preserve the trade of the west; third, revenue.

The first of these objects has been attained, and the attention of your committee has been principally directed to a consideration of the second. That to secure and preserve the trade of the west is an object worthy the continued exertions and resources of the "Empire State," cannot and will not be denied; that it is so secured may well be doubted. The importance of the western trade will be seen by a view of the vast extent of country bordering upon and surrounding the western lakes, a region of country more fertile and productive the sun in his course through heaven does not shine upon. If we glance an eye over the immense regions connected by the western lakes and their tributary streams, if we regard the fertility of soil, the multiplicity of product which characterize those regions, and if we combine these advantages afforded by nature with the moral energy of the free and active people who are spreading their increasing millions over its surface, what a vista thro' the darkness of time opens upon us! We see arts, science, industry, and social happiness, already increasing in those countries, beyond what the most inflated fancy would have dared to hope, thirty or forty years ago.

As yet the commercial and agricultural resources of the west are not developed. These twin sisters of the wealth of nations are yet in their infancy. Owing to the rapid increase of population in Ohio, and the wild and uncultivated state of a portion of her territory, the surplus productions of her farmers have until recently been consumed within her own territory. Michigan and Illinois, comparatively speaking, have furnished nothing for transportation; but when their exhaustless soil shall be cultivated and improved by the hardy and industrious yeomanry of the north and east, who are emigrating thither to a degree unprecedented in the annals of our country, their rich productions will be put afloat, and will find a market upon the shores of the Atlantic, through such channel as presents safety, cheapness and speed, and to the most advantageous market. The citizens of the west have witnessed the commencement, progress, completion and effect of the splendid system of internal improvements in this State, and are nobly imitating the example with an enterprize and zeal worthy their character. Already are the head waters of the Mississippi connected at different places with the great chain of western lakes, by means of canals and railroads. The channels of communication now opened and which will hereafter be opened between the lakes and the interior, will be thronged with vehicles of transportation, conveying the rich fruits of the labors of millions of free and happy people to flourishing cities and villages upon the shores of the lakes, whose population, wealth and enterprize will be equalled only by those upon the shores of the Atlantic.

The surplus productions of this extensive region will find their way to the Atlantic. Natural communications possess facilities and advantages which artificial never will and never can. Lake and river navigation is being understood. Steam power has changed every thing. Twenty-three by-gone years have witnessed improvements in commercial facilities in our own State which have claimed the admiration and imitation of the world.

The lethargy under which the people of Canada have slumbered for the last century, has been thrown off, and they are now fully awake to the importance of internal improvements. They are beginning to appreciate the natural water communications with which nature has so bountifully supplied them. They have entered the lists, and are nobly contending for a participation in, if not a monopoly of, the rich dowry of the western trade. Their enterprize has caused a communication to be opened around the Falls of Niagara, a distance of forty-one miles, by which vessels carrying 1,000 barrels of flour can go through without being lightened, at an expense of one cent per barrel, exclusive of tolls. The amount of business done upon this canal will be seen, by a reference to the fact, that 50,000 barrels of salt passed through during the last season, and had the requisite repairs been made so as to have opened the canal with the commencement of lake navigation, the revenue would have amounted to more than 50,000 dollars.

The evil which the Canal Commissioners feared in 1812 now really exists. The produce designed for transportation upon the Upper Lakes is now let down to Lake Ontario by means of this canal with facility, and for a trifling expense. The prediction of the Canal Commissioners, "that articles for exportation, when once afloat on Lake Ontario, would, generally speaking, go to Montreal, unless our British neighbors were blind to their own interests," is now fully verified. By a reference to the parliamentary proceedings of the Canadas during the last winter, it will appear obvious that they are not thus blind; that on the contrary, they duly appreciate the importance of this trade, and that the greatest industry, activity and talent are employed in the attainment of further improvements on the most magnificent scale. Appropriations have already been made for the improvement of the St. Lawrence, by which it is intended to connect the Atlantic with the lakes by ship and steamboat navigation. Let them make the Welland canal and the St. Lawrence navigable, as they purpose to do, and which they will do, for steamboats, and Cleveland will be within a sixty hours' ride of Montreal. When these improvements are completed, vessels of 300 tons can load at Chicago, at Cleveland, at Detroit, at Oswego, and other ports on the lakes, and deliver their cargoes at foreign ports. When direct exportation has once succeeded, direct importation will follow as a matter of course. When the Welland canal shall be completed, and the St. Lawrence improved, as designed, goods may be delivered at Cleveland from London for less than one-half what it now costs by the way of New-York and the Erie canal. Make the Erie canal a public highway, and the Canadian route will be preferable by one-quarter in point of expense. The vast superiority in the great point of economy in transportation, effected upon natural water communication, admitting of navigation by large vessels or steamboats, above transportation upon canals and railroads, has been satisfactorily proved by experience on the Hudson, the lakes, and the great rivers of the west. Even at the present reduced rates of toll upon the Erie canal, river transportation has the advantage by more than 300 per cent. The charge upon the transportation of wheat, per bushel, from Troy to New-York, is three cents, while the same transportation for a like distance upon the canal cannot be effected for less than ten cents.

The importance of the western trade has aroused a spirit of enterprize and competition in sister States. To participate in this trade, rival canals and railroads have been constructed in Pennsylvania, Maryland and Virginia, and it cannot be denied that these are already diverting a part of that trade from its natural current toward the lakes and the Erie canal, and will no doubt continue to produce such diversion in a ratio regularly augmented in their progress to completion. It cannot be questioned that a great portion of the produce and merchandize going to and coming from the fertile countries, at some distance south of the great chain of the lakes, and east and north of the tributary streams of the Mississippi, must find their way into Virginia, Maryland and Pennsylvania. To prevent this diversion, the tolls upon the Erie and Ohio canals have been very judiciously reduced during the present winter.

The State of Pennsylvania has already declared, through one of her Senators in Congress, (Mr. Wilkins,) during its present session, her determination "still to go on in the advancement of her great system of internal improvements. She would not stop short in her great works. No combination would have the power to arrest her progress, until she should have accomplished her ultimate object, of depriving the empire State of New-York of all the carrying trade of the west. To this great point Pennsylvania was rapidly advancing, and under the wise administration of her State Government, she would not stop short of its accomplishment. She was engaged in an honorable rivalry with the empire State of New-York for the rich dowry of the western trade, and she would not stop until she should have obtained the treasure." These works, then, which have cost Pennsylvania such enormous amounts, will be sustained, should they pay nothing but the annual repairs required to keep them in order. But Pennsylvania has obstacles to surmount of no ordinary character, before she will witness the consummation of the objects declared by the honorable Senator. Nature has interposed an insurmountable barrier to the construction of canals from the navigable waters leading to her commercial emporium and the Ohio. That Pennsylvania does possess advantages over New-York cannot be concealed or denied. Their canal and railroads were in successful operation for the present season before the 20th of March last, while our canals must remain closed by the frigid laws of nature, on an average of seasons, until the middle of April. Goods were delivered at Pittsburg on the 26th of March, in eleven days from Philadelphia, and before our canals are opened, will be delivered at the Sault St. Marie or Chicago. It is said, too, that the Pennsylvania route possesses a decided advantage, in point of time and expense; that merchandize can be delivered in fourteen days at Cincinnati from Philadelphia, while from New-York, by the Erie and Ohio canals, it will require from twenty to twenty-five days, and frequently much longer; and that the expense of transportation from Philadelphia to Cincinnati, during the present season, will be $1.80 per hundred, while from New-York to Portsmouth, on the Ohio, $2.06 1-4.

That the trade of the west is of vast importance and is becoming yearly more and more important to the commercial interests of this State, cannot admit of doubt: and that there is danger of its being diverted, or a portion of it at least, through other channels than the Erie canal, to the Atlantic, your committee think is equally apparent.

In the spirit of enterprize and rivalry with which our southern and northern neighbors are actuated, your committee see no cause for serious apprehension, jealousy, or alarm, because they believe it is within the power of this State to secure the trade of the west beyond the reach of competition or rivalry.

The remedy and only remedy which can be applied to secure to ourselves and posterity this rich inheritance of national wealth, is by opening a communication between the Hudson and lakes Ontario, Seneca, Cayuga and Onondaga, of sufficient magnitude to admit the passage of the smaller class of steamboats, and of the ordinary vessels which navigate those waters. The advantage to be derived from such a communication must be apparent to all. It will combine safety, cheapness and expedition, the three great considerations in commercial enterprize, and save the loss and expense attendant upon numerous transhipments.

That such a communication is entirely practicable, your committee entertain no doubt. Whether the object can be better accomplished by improving the Mohawk river, Fish creek, and from thence into Oneida lake, and down the outlet to Three River point, and thence down the Oswego river to lake Ontario; or by enlarging the Erie canal and the Oneida lake side cut, and thence to lake Ontario by the Oneida lake and river, and the Oswego river, your committee are unable to form an opinion, not possessing the requisite information. Upon the practicability and necessity of carrying this project into execution, your committee have been referred to a communication from Benjamin Wright, Esq., late chief engineer of the New-York canals, addressed to Jos. E. Bloomfield, Esq., which is hereto attached, and to which they beg leave to refer, as a paper containing much valuable information.

As to the expense of opening such communication, your committee possess no correct information upon which to base an opinion. Comparing, however, the estimates of Judge Wright in relation to the St. Lawrence canal, and estimates which have been made as to the expense of opening all the proposed channels of communication from Utica to Oneida lake, and from thence to Ontario, Onondaga, Cayuga, and Seneca lakes, (which latter is estimated at less than $900,000,) the cost will, when contrasted with the important results, be but trifling.

The amount of revenue to be derived from transportation is difficult to be imagined, and much more difficult to be ascertained. Judging, however, of the future from the past and the present, we may safely come to the conclusion, that ten years will not elapse, after the completion of the proposed project, before we witness the same busy scenes upon its waters that we do now upon the Erie canal. Calculation, like our advance in numbers, outruns fancy. "Things which twenty years ago a man would have been laughed at for believing, we now see. At that time, the most ardent mind, proceeding on established facts by the unerring rules of arithmetic, was obliged to drop the pen at results which imagination could not embrace."

The Erie canal is but a carrying place between the Hudson and the great lakes. It bears about the same proportion to the amount of business which is done between those waters now, as the Great Western turnpike did twenty years since. Proportionably to the wants of the country it affords about the same facilities.

It is unnecessary for your committee to dwell on the advantages which the commerce of the State must derive from opening a scene so vast to its incessant activity, and to the influence which must result from holding beyond the reach of rivalry and competition, a key to the commerce of our western world. They are known, and will be duly appreciated by the intelligent people of this State.

Deeply impressed with the importance of the subject, your committee are of opinion that speedy measures ought to be adopted to carry into effect the prayer of the petitioners. In pursuance of these views and opinions, your committee have prepared a bill, which they now ask leave to introduce.

Letter from Benjamin Wright, Esq.

NEW-YORK, April 1, 1834.

JOSEPH E. BLOOMFIELD, Esq.

DEAR SIR,—Your favor of 29th ult. is before me, and I will endeavor to give you all the information in my power touching the subject of your letter. The project which the Canadians have in hand to make a steamboat canal of ten feet water, to pass all the rapids between Montreal and Ogdensburgh, on Lake Ontario, is one which has a very important bearing in its consequences upon the people of the State of New-York, and the Erie canal tolls. It is certain to my mind, that with such a canal as I have projected along the St. Lawrence and the Welland canal, in good order, that all the products of the soil, from all the Upper Lakes, can be carried to tide water *a great deal cheaper by this route than they can ever be done by the Erie canal* or any other work.

The plan of the improvements as projected along the St. Lawrence, is, to make short canals and locks around the rapids, leaving the steamboat to navigate the river and lakes in all the intermediate spaces. The whole length of all these canals (although in seven or eight different pieces), does not exceed 31 miles, and about 175 feet of lockage. This can be executed for about three millions of dollars, and completed in three years from the time it is commenced, if they choose to do so.

That the Welland canal can and will be put in good order there is no doubt, as it appears by the measures adopted at the last session of their Parliament, that they intend to make it a government work, and will no doubt do so next winter.

The question now arises, what shall be done by the State of New-York to retain the trade of the Upper Lakes to her great commercial port, under all these views of the matter? I see no better plan than your memorial, adopted by the people of Utica, suggests, namely, by a large canal to the Oneida lake, or rather to a certain point on Fish creek, where 8 feet water can be at all times carried to the lake; thence through the lake and down the outlet to Three Rivers, and then down the Oswego river. And I see by your letter, that your views extend to branching off up the Seneca river, to Cayuga lake: this would be a very good addition to the whole project.

You ask me to give my views of the expense of such a work from Utica to the Oneida lake, upon the plan you propose, of 60 feet canal width and 8 feet depth, with locks the size of the Welland canal, which is 110 feet by 22 in the chamber.

As I know the country well, from having surveyed it, I see no point of extra expense in the canal except in passing the Rome summit, and the plan of getting over Oriskany creek, and Sedaqueda; these latter I do not think would present any very formidable obstacles to good engineers; but I have not sufficiently digested a plan of the project that would enable me to even approximate the expense. I know that you must look for water either from Fish creek, to the Rome summit, or from Black river. The former would not be expensive, as I know and have surveyed a route where it may be brought easy and cheap.

This project would, if executed, enable vessels of 130 to 140* tons, to navigate on the large rivers and lakes with sails, and on the canals be towed by horses, or it would permit steamboats of certain construction, with wheel in stern, to pass through; such boats, from a model I have seen, would carry 100 tons of goods or produce.

The expense of such a project can only be known by a regular survey, and such survey ought to be made by an engineer who knows the formation of the whole country, and can adapt his plan to a good and cheap work, and overcome the various difficulties best.

I have not said any thing about the competition which is to be looked for from Pennsylvania if she goes on to form a connection between her canal at Pittsburg with the Ohio canal at Akron. This latter place is about 40 miles from Cleaveland, on Lake Erie, and we see already that Pennsylvania has been this year navigating her canals since about the 10th of March. The truth is, and we ought not to disguise it, that Pennsylvania can navigate three or four weeks earlier than we can, and even Canada can open her Welland canal nearly one month earlier than we can our Erie canal, and the St. Lawrence canal can be navigated earlier than our canals if they pay a little attention to management to clear the ice. That the projeet of making a canal of the size I have named from Utica to Oneida lake *is feasible at an expense not alarming, is certainly true;* indeed, with the exception of the difficulties at the summit and east of it, all the country is as favorable *as you can wish or desire.* That such canal will be able to transport much cheaper than the present canal, taking into consideration that such a large portion of distance between Oswego and Utica is natural waters, there can be no doubt; and that the time will soon arrive when we must expect competitors for that lake trade, is also certain, and in the race for this important object it is of vital importance that we should have early and sound information on every point relating to this matter, so as to act promptly and definitely when we do act, cannot be doubted.

If such a project was well executed so far as from Oswego to Utica, there is no doubt its advantages would be such as to show the propriety of conveying it on to some proper points of the Hudson, and then we should see whether we cannot compete successfully with any of our neighbors, north or south of us. The prize contending for is a grand one, and well worthy of the exertions of the State of New-York.

Permit me to make one remark before I close as to the Oneida river, below Oneida lake. I have understood that some surveys have been made to estimate the expense of overcoming the three rapids in the 18 miles of this river between Oneida lake and Three River point. Let me say that great care is necessary to prevent injury to the country, by dams, across this river, which I have heard is the plan proposed. There is a great extent of flat country along this river, and no dams ough tto be made on any account. I am decidedly of opinion that the improvements ought to be by short canals and locks. One at the outlet of the lake would be about one mile, one at Cockederoy three-fourths of a mile, and one at Oak Orchard: say one mile, all the other parts of the river are, or may easily be, made 8 feet water, and this would do no injury to the country.

I have suggested the above from my wish to see every improvement of this kind, when attempted, done right, and I know too well the evils to a country to have a pernicious plan of such works adopted.

I am not perfectly satisfied with the size of the locks and canal as you proposed, I should prefer locks 24 and 26 feet wide, and a canal not less than 75 to 80 feet on the surface. However, this is a future consideration, and when orders are given for the survey, the estimate can be made on as many different plans as shall be thought advisable.

With great respect and esteem, I am, dear sir, your obedient servant, BENJ. WRIGHT.

* Vessels of this tonnage measurement will carry 250 tons dead weight.—J. E. B.

Importance and Advantages of Railroads.

(Continued from page 772.)

Among the railroads now in progress, those by which it is proposed to connect the metropolis with Birmingham, Manchester, and Liverpool, are in every point of view the most interesting and important. This line has been undertaken by two distinct companies, under the sanction of different acts of Parliament. That part which connects London with Birmingham has been undertaken by a joint-stock company, under the title of the "London and Birmingham Railway Company:" the continuation of the line is carried from Birmingham to Warrington, where it unites with a branch of the Liverpool and Manchester railway, which runs from Warrington to Newton, a point of the main line just midway between Liverpool and Manchester. This line from Birmingham to Warrington is incorporated under the title of the 'Grand Junction Railway Company.' The acts of incorporation, like others of the same kind, have been opposed in Parliament by many landed proprietors. The act for the Birmingham and London Company was, in the first instance, thrown out of the House of Lords through the influence of a single peer, because he apprehended some annoyance to a mansion of his, in the neighborhood of which the railway must have passed: although it appeared that this mansion was one which he was not in the habit of occupying. The noble proprietor and his friends on the committee did not attend to hear the evidence: they came, however, to the division, and threw out the bill. How the Company was able to remove this opposition in the subsequent session of Parliament we do not know; but removed it was, and the bill passed.

The ill effects of the slopes on the Manchester and Liverpool railway have impressed on engineers the indispensable necessity of avoiding them, or rendering them as gentle as possible in future undertakings. This object will be attained in a great degree on the Birmingham and London line, but at an enormous expense. The country through which it will pass is of an undulating character, so that there is scarcely a mile of the road in which either cuttings or embankments will not be necessary. Where the elevations to be encountered are inconsiderable, a level is obtained by forming a chasm in the crest of the hill, and using the stuff removed from it to form an embankment in the valley; but there are numerous elevations along the proposed line of road, which either from their great height or other causes render this method impracticable. In such cases the level of the road will be maintained by penetrating the elevations by tunnels. Of these structures eleven were proposed in the Parliamentary plan; but it is probable that cuttings will be substituted for some of them as the work proceeds, and that the actual number will not exceed eight: the largest will be constructed at Kilsby, near Daventry, seventy-seven miles from London; it will be about a mile and a half in length. Another, situate about two miles beyond Watford, will be a mile in length. That which will pass under Primrose Hill, and under the roads leading from the Regent's Park, and from St. John's Wood to Finchley, will be half a mile in length: one near Weedon will be three-quarters of a mile long, but none of the others will exceed a quarter of a mile in length.

The principal obstacle to the adoption of tunnels on railways, worked by steam power, has been the want of sufficient ventilation. The furnace of the engine soon renders the air unfit for breathing, and the impurity produced by the passage of one engine might continue until the arrival of the next. It is proposed, in the longer tunnels, to overcome this difficulty by providing shafts or chimneys at short intervals, carried from the roof of the tunnel to the surface of the ground above. In the case of the long tunnel at Kilsby, some of these shafts will be one hundred feet high; in the other tunnels they will vary from thirty to seventy feet; all of them will be eight feet in diameter. We are

not aware whether the sufficiency of such an expedient for the purposes of ventilation has yet been ascertained by experiment. It has been stated that the speed with which the engines will traverse the tunnels will be so great, that very little ventilation will suffice. But the ventilation necessary for the tunnel will be the same, at whatever speed the engine may proceed; for the air drawn through the fire during the passage of the engine will be the same whatever the speed may be. Each stroke of the piston will draw through the fire the same quantity of atmospheric air; and it is obvious that the same number of strokes of the piston will produce the same number of revolutions of the wheels, and therefore the same progressive advance of the engine at whatever rate the piston may move. If the engine moves rapidly through the tunnel, it will, therefore, still vitiate the same quantity of atmospheric air; but there will be this convenience, that the passengers will not be detained in the air so vitiated any considerable length of time. The longest tunnel upon the projected line will be traversed in less than five minutes, and the shafts will subsequently remove, though perhaps not very speedily, the impure air.

In cases where it is not found practicable to traverse the valleys by embankments, bridges to support the railroad, of great extent, have been projected, by which the valleys may be arched over. One of the most stupendous of these works is the viaduct intended to bestride the valley of the Ouse. This work, which will be situate between Newport Pagnel and Stony Stratford, will cross the valley of the Ouse about a mile and a half eastward of the latter town; its extreme length will be a mile and a quarter, and the height of the level of the rails at the centre arch above that of the water will be nearly fifty feet; the centre portion will be supported on seven magnificent arches, each of fifty feet water-way; the keystone of each arch not to be less than twenty-five feet above the surface of the ground. The extreme ends of the viaduct will be formed by embankments. By such gigantic efforts of labor and skill, the inequalities of the ground will be greatly diminished, though not absolutely overcome.

Between the extremities of the line at London and Birmingham, there will remain five ridges of different elevations, separating six valleys varying in depth; so that the line undulates throughout nearly its whole extent. The entire length will be 111¼ miles: of this there will only be nine and a quarter miles absolutely level. Proceeding from the Depot near Primrose Hill there is a gentle descent of eight feet in two miles to the valley of the Brent; there is then a gradual ascent amounting to 128 feet in eleven miles, by which the line is conducted to the crest of the first ridge at Olney; the road then descends eleven perpendicular feet, and crosses the valley of the Colne; it next encounters the second ridge, which it ascends for fifteen miles at the average rate of about fourteen feet in a mile. From the summit of this ridge, situate at Tring, thirty miles from the Depot, it will descend for twenty-three miles, falling 160 feet; here it will be conducted by the great viaduct over the valley of the Ouse, and again ascend a ridge at Blisworth, between Northampton and Towcester: from the viaduct to the summit of this ridge the road ascends 100 perpendicular feet in 6 miles, being at the rate of about sixteen feet in a mile; it then again falls forty feet in five miles, and crosses the valley of the Ahen near Weedon, sixty-four miles from the Depot. It next crosses a ridge which intersects the line between Daventry and Northampton at Kilsby: this ridge is ascended by a slope twelve miles in length, and rising seventy-six feet. From Kilsby summit the road descends into the valley of the Avon by a slope of fourteen miles, descending 132 perpendicular feet; the line here, after crossing the Avon, passes through Coventry, and ascends the last ridge at Berkswell summit, by a slope of seven miles and a half, rising 115 perpendicular feet: from this summit it again descends into the valley of the Blyth, by a slope of three miles and a half, falling fifty-seven perpendicular feet; from which it ascends by another slope of ten miles, rising forty-eight feet, to the station at Birmingham.

On the whole line there are twenty-five miles and a half, proceeding from London to Birmingham, in which there is an ascending slope at the average rate of fifteen feet in a mile; and there are eighteen miles and a half in which there is a descending slope of the same inclination. The extreme gentleness of these slopes is such, that, in descending, the train may be safely permitted to move by gravity, so that during the descent the whole of the moving power may be saved. The power saved on the descending slopes may, therefore, be considered as nearly proportional to the additional power required in the ascending ones; and as no part of the road will require a greater addition to the power requisite on the level than two-thirds, the locomotive engines at present used, imperfect though they be, will be fully equal to the exigencies of the line. The expenditure of power from London to Birmingham will be greater than in returning; because the station at Birmingham is about 350 perpendicular feet above the station at London.

The width of this magnificent road on the embankments will be twenty-eight feet; the rails of each line will be five feet asunder, and the line will be separated by a space of six feet; an additional space of six feet will be left on each side between the outer rails and the edge of the embankment. Where the road is cut through, elevations an additional foot in width will be allowed to each side for drains: the deepest chasms by which the road penetrates the elevations will not exceed fifty-five feet,—the greater number, of course, being considerably less; and the highest embankments by which valleys are crossed will not exceed 45 perpendicular feet. The width of the road in the tunnels will be six feet less than on the embankments; there being only a space of three feet left between the outer rails on each side, and the walls of the tunnel. The sides of the embankment will slope downwards by a more gentle inclination than that used on the embankments of the Manchester railway, being at the rate of two horizontal feet to one foot perpendicular.

Supposing—what, consistently with the results of the whole history of human invention, is in the last degree improbable—that the locomotive engines, though now only in their infancy, shall not receive any farther improvements, the *time* of a first class train from London to Birmingham would be only five hours and a half. The gentleness of the slopes will render their motion almost as uniform and punctual as that of the hands of a time-piece; so that the passage of the successive trains from hour to hour through the different parts of the country will almost serve the purposes of a clock.

It appears from documents obtained from the public offices, that the present number of passengers between Liverpool and London annually amounts to about half a million. If we may apply to this railroad results proportionate to those with which we are furnished by that of Manchester, we should expect that the number of passengers between the two towns would be increased in a threefold proportion. But there are obvious reasons which lead us to expect a much larger increase of intercourse, in proportion to the population of the two towns, than in the case of Manchester and Liverpool. Between these two places, the railroad passes through not a single town, or even village; the intercourse is, therefore, in a great degree confined to the population of Manchester and Liverpool themselves. Now, a large portion of the intercourse on the Birmingham and London railway will be supplied from the populous towns which skirt its course on either side. These tributary streams may be expected to swell the main current to at least double its magnitude. The distances of the principal places adjacent to the line, *in time*, from London, supposing branch railways to be formed, would be as follows:

	Hours.	Minutes.
Aylesbury,	2	30
Bedford,	3	30
Birmingham,	5	30
Dudley,	6	—
Kettering	4	15
Kidderminster,	6	30
Leamington,	5	—
Northampton,	3	—
Rugby,	4	—

The Grand Junction railroad, from Birmingham to Warrington, will be a work presenting less difficulties, and attended with a more limited investment of capital. The country through which it passes is less intersected by ridges and other inequalities; although here also a considerable extent of cuttings and embankments must necessarily be made. As a commercial speculation, it is needless to say that it presents the fairest prospects of a successful issue: indeed, the formation of the Birmingham and London line rendered the Grand Junction line inevitable. Thus, the whole kingdom from London, in a north-westerly direction to Liverpool, will be traversed by this great artery of communication; producing an interchange of benefits, physical, and moral, commercial, social, and political, the importance and amount of which it would be impossible to estimate or predict.

The formation of this great line of cheap and rapid communication has rendered the construction of similar means of intercourse in other directions inevitable; otherwise the benefits of the metropolitan market would be almost exclusively conferred upon those agricultural and manufacturing producers whose good fortune might place them in its neighborhood. In their own defence, therefore, landed proprietors and capitalists in every part of the country must exert themselves; for whatever doubts they may have formerly entertained as to the expediency of constructing such means of communication with the metropolis, they can hardly any longer hesitate as to what they should now do; unless they desire to see themselves cut off from the benefits arising from the production of articles which cannot be transported on turnpike roads or canals in competition with railroads. We find, accordingly, that various undertakings have already been set on foot for the construction of extensive lines of communication, in other directions from the metropolis. An act of Parliament was passed, during the last session, for the construction of a line connecting London with Southampton and Portsmouth, passing through Esher, Basingstoke, and Winchester. As this project was countenanced by the principal landed proprietors through whose property it will pass, the act passed the legislature without difficulty or expense.

The projectors of another line were not, however, so fortunate. It was proposed to cross the kingdom by a railroad in a direction due west from the metropolis, extending to Bristol, and passing through Maidenhead, Reading, and Bath, and in the immediate vicinity of Windsor, Oxford, Gloucester, Cheltenham, and Devizes. The company who applied for this act experienced, during the last session, the most vexatious and determined opposition on the part of some of the landed proprietors; and, after having been driven to an expenditure of above £30,000, in the production of evidence, and in other parliamentary charges, the bill, though it passed the Commons, was thrown out in the Committee of the Lords, through the influence, it has been said, of a single Peer! The Company will find means to remove the opposition, and the bill will probly pass in the next session. This railway would facilitate the communication of the metropolis with Wilts, Somerset, Gloucester, Wells, Bridgewater, Taunton, Exeter, Plymouth, Devonport, Falmouth, and many other places. It would also, in conjunction with steam navigation, connect the metropolis with

the ports of the Bristol channel, with South Wales, and with the south-western coast of Ireland.

The Southampton line will open an easy communication with the coast of Hampshire, and by the Southampton steam-packets, with the Isle of Wight, and the Channel Islands; also with the ports of St. Malo, Havre, and Cherbourg. If the railway contemplated between Havre and Paris should be constructed, a communication would be thus opened between London and Paris, which would reduce the time of transit between those capitals to about twenty-four hours, allowing twelve hours for the voyage by steam from Southampton to Havre.

To form an estimate of the effects which these vast undertakings are likely to produce on the intercourse of the country, it will be necessary to consider the travelling which at present exists on these lines, and to compare it with the effects produced on the intercourse between Manchester and Liverpool. It appears from evidence given before parliamentary committees, that the annual number of passengers between London and Birmingham amounts to 488,342. By the stamp-office returns, it appears that the income produced from coaches passing along the proposed route of the Southampton railroad, at the present charge for travelling, amounts to four hundred and forty-six thousand one hundred and ninety-three pounds annually. Now, if we assume that the average cost of travelling the whole distance to Southampton is one pound, it will follow that the travelling along that line is equivalent to 446,193 travellers annually, the whole distance. It appears also, from similar returns, that the number of travellers along the proposed line of the Great Western Railway at present may be estimated at 302,118. Thus, along these three lines, the present intercourse would stand as follows:

Birmingham,	488,342
Bristol,	302,118
Southampton,	446,193
Total,	1,236,653

Now, we have already stated that the number of passengers between Manchester and Liverpool, before the establishment of the railroad, was at the rate of 450 daily; and that it was during the half year ending 31st of December, 1833, at the rate of 1210 daily; being an increase in the ratio of eight to three, very nearly. Supposing, then, that the three railroads now contemplated produce a like increase of intercourse, we shall obtain the probable number of passengers upon them by increasing the above estimate in the ratio of eight to three; the results would be as follow:

Birmingham,	1,302,244
Bristol,	805,642
Southampton,	1,189,848
Total,	3,297,734

Thus, the number of persons who would pass annually to and from the metropolis, along these three lines of road, would be nearly equal to a fourth of the whole population of Great Britain.

Our limits compel us to omit the notice of numerous important railways which are in contemplation, and some of which are in a state of very forward preparation; among these, there is one entitled to more especial notice, being not much less in extent than the Liverpool and Manchester railway, and passing through a district of great commercial importance. The line we allude to will be carried from the town of Preston in a southern direction through Wigan, to the Manchester railway; on which it will enter at a point equally distant between Manchester and Liverpool; thus connecting the whole district, for a distance of twenty-two miles from Preston to Newton, with Manchester and Liverpool. The act for this railway has passed the legislature, and it is now constructing under the direction of Mr. Charles Vignoles, civil engineer.

A line of railroad is already in an advanced state, by which it is proposed to connect Leeds and Selby, and thus open a more easy and rat pid communication between that importan mart and the port of Hull. Another line is in preparation, by which to cross the neck of the island, and to connect the Irish Channel with the German Ocean, extending from Carlisle to Newcastle.

Of the shorter railroads in progress may be mentioned that proposed to be carried from London Bridge to Greenwich. This work ought perhaps more probably to be called a *viaduct*, since it will be sustained by masonry, supported by a series of arches, for nearly the whole distance: its length will be three miles and three quarters, and the *time* will be twelve minutes.

The only railroad yet undertaken in Ireland is that which connects Dublin with King's Town, a distance of about seven miles. This road, which is now completed, has been executed under the superintendence of Mr. Vignoles. King's Town and its neighborhood is the most populous district around Dublin; and besides being the most favorite watering-place, is at present the place of residence of the families of most of the wealthier mercantile and professional classes. By a recent arrangement, the post-office steam-packets from Liverpool and Holyhead land at King's Town harbor, instead of Howth. These circumstances, combined with other local advantages, present a fair probability of the success of this railway.

Notwithstanding the unquestionable commercial advantages which have resulted to the joint-stock company which established the Manchester railroad, it is certain that these advantages are considerably less than they would have been had there been sufficient previous experience in the working of railroads, under the circumstances of so vast an amount of rapid transport as the company have found it necessary to undertake. Much still remains to be learned, not only with respect to the construction of the locomotive power, but likewise respecting the construction of the railroad itself. The cost of the locomotive power has been so great, that the directors lately thought it advisable to appoint a sub-committee of their own body, assisted by Mr. Booth, their treasurer, to inquire and report respecting the causes of the amount of this item of their expenditure, and to ascertain whether any and what measures could be devised for the attainment of greater economy. A very able and satisfactory report was made by this committee, or, to speak more correctly, by Mr. Booth, who was the only individual connected with it who really had a competent knowledge of the subject of inquiry.

It appears that previous to the establishment of the railway, Messrs. Walker and Rastrick, engineers, were employed by the Company to visit various places where steam power was applied on railways; for the purpose of forming an estimate of the probable expense of working the railway by locomotive and by fixed power. These engineers recommended the adoption of locomotive power, and their estimate was, that the transport might be effected at the rate of .278 of a penny, or very little more than a farthing per ton per mile. In the year 1833, five years after this investigation took place, it was found that the actual cost was .625 of a penny, or something more than a half-penny per ton per mile; being considerably above double the estimated rate. Mr. Booth very properly directed his inquiries to ascertain the cause of this discrepancy, by comparing the various circumstances assumed by Messrs. Walker and Rastrick in making their estimate, with those under which the transport was actually effected. The first point of difference which he observed was the *speed* of transport: the estimate was founded on an assumed speed of ten miles an hour, and it was stated that a four-fold speed would require an addition of 50 per cent. to the power, without taking into account wear and tear. Now, the actual speed of transport being double the speed assumed in the statement, Mr. Booth holds it to be necessary to add 25 per cent. on that score.

The next point of difference is in the amount of the loads: the statement is founded upon the assumption, that every engine shall start with its full complement of load, and that with this it shall go the whole distance. The facts, however, are, says Mr. Booth, that instead of a *full load* of profitable carriage *from* Manchester, about half the waggons *come back empty*; and instead of the tonnage being conveyed the whole way, many thousand tons are conveyed only half the way: also, instead of the daily work being uniform, it is extremely fluctuating. It is further remarked, that in order to accomplish the transport of goods from the branches, and from intermediate places, engines are despatched several times a-day, from both ends of the line, to *clear the road*; the object of this arrangement being rather to lay the foundation of a beneficial intercourse in future, than with a view to any immediate profit. Mr. Booth makes a rough estimate of the disadvantages arising from these circumstances, by stating them at 33 per cent. in addition to the original estimate.

The next point of difference is the fuel. In the orginal estimate, *coal* is assumed as the fuel, and is taken at the price of five shillings and tenpence per ton: now the Act of Parliament forbids the use of coal, which would produce smoke; the company have, therefore, been obliged to use *coke*, at seventeen shillings and sixpence a ton. Taking coke, then, to be equivalent to coal, ton for ton, this would add .162 to the original estimate.

These several discrepancies being allowed for, and a proportional amount being added to the original estimate, the amount would be raised to .601 of the penny per ton per mile, which is within one-fortieth of a penny of the actual cost. This difference is considered to be sufficiently accounted for by the wear and tear produced by the rapid motion; more especially when it is considered that many of the engines were constructed before the engineer was aware of the great speed that would be required.

When we formerly called the attention of our readers to this subject, we stated that the proceedings on this railway ought to be regarded as merely experimental; that the engines must be consequently varied in weight and proportion; that each quarter would produce new ones of increased power and efficiency; and that, consequently, the expenses thus incurred for a given amount of traffic ought not to be regarded as the permanent and regular expenses of the road, but rather as the price paid for that knowledge which could be obtained by no other means than by experiments on the same vast scale. We find that subsequent events have fully confirmed our opinions.

"What then," says Mr. Booth, in the Report already alluded to, "is the result of these opposite and mutually counteracting circumstances? and what is the present position of the Company in respect of their moving power? Simply, that they are still in a course of experiment, to ascertain practically the best construction, and the most durable materials, for engines required to transport greater weights, and at greater velocities, than had till very recently been considered possible; and which, a few years ago, it had not entered into the imagination of the most daring and sanguine inventor to conceive; and farther, that these experiments have necessarily been made, not with the calm deliberation and quiet pace which a salutary caution recommends, making good each step in the progress of discovery before advancing another stage, but amidst the bustle and responsibilities of, and large and increasing, traffic; the directors being altogether ignorant of the time each engine would last, before it would be laid up as inefficient, but compelled to have engines, whether good or bad; being aware of

various defects and imperfections, which it was impossible at the time to remedy, yet obliged to keep the machines in motion, under all the disadvantages of heavy repairs, constantly going on during the night, in order that the requisite number of engines might be ready for the morning's work. Neither is this great experiment yet complete; it is still going forward. But the most prominent difficulties have been in a great measure surmounted, and your committee conceive that they are warranted in expecting that the expenditure in this department will, ere long, be materially reduced, more especially when they consider the relative performances of the engines at the *present time* compared with what it was two years ago."

We must now conclude these observations on the Manchester railroad, without noticing what appears to us of scarcely less importance than the subject to which the Committee have directed their inquiries,—we mean the state of the road itself. No one who has recently travelled on it can be ignorant to what a great extent the rocking and swinging of the carriages from side to side is increased. We are quite aware of the impossibility, under the circumstances, to obviate entirely an effect of this kind; but it now amounts to a degree which is not only inconvenient to travellers, but which cannot fail to be highly detrimental both to the carriages and to the road. This effect will doubtless be traced to the inequalities which have been produced in the joinings of the rails. On examining the rails in various parts of the road, we found a very small proportion of them in which the joinings had maintained that degree of exactness which is indispensable to safety and stability, when great speed is attempted. In most cases, the surface of one rail at the joint is more or less depressed below the surface of the other, and in some cases this depression amounts to a serious fraction of an inch. The consequence is, that the passage of the wheels over the rails can be distinctly felt in the carriages, and wherever two inequalities do not occur together at corresponding joints, and in the same direction, the carriage receives a lurch more or less violent according to the amount of the inequality. The effect of the collision of the wheels on the rails at the joints is, in many cases, rendered quite perceptible. We have ourselves taken from the road pieces of iron of considerable magnitude, detached from the rails at those joints by the succession of blows which they receive as the wheels pass over them. The remedy for these defects must be sought in giving greater stability to the sleepers and chairs which sustain the rails. It would be also extremely desirable to keep an exact register of the breakages of rails in different parts of the road,—specifying in every case the part of the rail where the fracture takes place. By this means we should be enabled to trace, with some degree of certainty, the causes of this course of wear. For example, it is at present doubtful on what part of the road fractures most frequently take place; it is said to be on the descending planes; but we apprehend that this statement depends more on conjecture than on ascertained facts. It would be also useful to ascertain whether the fractures take place more frequently *over* the chairs or *between* them; also, whether they happen oftener at the extremities of the rails, or in some intermediate part. The surface of the fractures should also, in every case, be carefully examined, to determine whether any accidental flaw has existed in the structure of the metal. Such a body of facts as it is in the power of the Directors to collect, at no cost to the Company, but by giving the necessary directions to their subordinate agents, would form an invaluable storehouse of knowledge for the guidance of their future operations, and those of other railroad companies.

We believe that one source of extraordinary expense, to which the Company have been subjected, may be traced to the adoption of *fish-bellied* instead of parallel rails, and to the insufficient weight of metal in them. The theory of the fish-bellied rail is doubtless seductive; and if the sleepers and blocks were absolutely immovable, they would, with a given weight of metal, have the advantage over the parallel rail—but in a rail of this form, on the slighest subsidence of the sleeper, or shifting of the chair, the rail being deserted by its support, its weakest point is immediately exposed to the incumbent weight of the waggons under the most disadvantageous mechanical conditions. In a word, the very circumstances which constitute the advantage of the fish-bellied rail are here reversed, and produce a proportionate liability to fracture. Independently of this, the weight of the rails (35 lbs. per yard) was quite insufficient; and we believe that where fractures take place, the Company have deemed it advisable to replace them by rails at 50 lbs. to the yard.

The Leeds and Selby Railroad Company have profited by this experience, and have rejected the fish-bellied rail; laying down a durable road of parallel rails at 50 lbs. per yard.

The advantages of railroads have of late years become so apparent, that their construction has been undertaken to a certain extent on the Continent. In France, a double line of railroad has been constructed, extending from St. Etienne to Lyons, a distance of thirty-four miles. This road is not adapted for very heavy transport, the rails weighing only 26 lbs. per yard. To obtain a sufficient level, fourteen tunnels were constructed; one of these is a mile in length; another, more than half a mile, is carried under the river Gier. The road is carried by a viaduct over the Soane. In the cost of this road we have a notable example of the commercial wisdom of our neighbors, who paid for the iron used on it four times the price at which they could have obtained it from us? A part of this road is a self-acting plane, on which the loads are moved by their own weight; on the other parts of it locomotive engines have been used.

A continuation of this road has been constructed from St Etienne to Roanne, extending about fifty-five miles. It consists of a single track; the first thirteen miles being formed of cast iron rails of 43 lbs. to the yard, and the last forty-two miles of rolled iron, 26 lbs. to the yard.

Among the enterprises of this kind undertaken in Germany, the railroad from Budweis to Lintz merits notice. The extent of the line is about eighty English miles; it was commenced under the direction of Gerstner in 1825, and is composed of wooden beams, bearing flat rails of iron, six yards in length, two inches in width, and one-third of an inch in thickness. It is intended for the purposes of general commerce, but more especially for the transport of salt.

Food.—By the experiments of Dr. Beaumont, it has been satisfactorily proved that from whatever is introduced into the stomach, the same article is invariably elaborated, whether animal or vegetable, tough or tender, it matters not; the result is the same, under all circumstances, when the digestive process is properly carried on. In the vicinity of Hudson's Bay, one of the exploring party, in those inhospitable regions, says he visited a cabin, one evening, when the inmates were at supper, which consisted of raw flesh of seals, fat, birds and entrails, which constituted a delicious meal. A young girl, the belle of the tribe, was sitting by, biting the inside of a seal to pieces, and distributing the bits to her companions. Train oil, particularly when rancid, is a delicious article, being both meat and drink for Greenlanders. Yet, it is worthy of remembrance, the chyme, the nutritious fluid which nourishes the body, is always the same, whether elaborated from putrid aliments or the most savory viands.—[Scientific Tracts.]

Manufacturing Establishments at Cincinnati, Ohio, in 1834.

There are more "manufacturing establishments" in this city than in any city or town in the west. Pittsburgh ranks next to us in that respect, and perhaps is ahead of us, when we take into consideration the difference of population. Cincinnati has a third more inhabitants than Pittsburgh. We have twelve or thirteen foundries and engine factories, for the manufacturing of engines for steamboats, flour mills, grist mills, rolling mills, and for blast furnaces, used in this section of country, and for sugar mills, corn mills, cotton gins, saw mills, and other uses, for the south, where an immense amount is exported yearly. An estimate was made in 1832, for the year previous, of the amount exported of articles of the above description, and it exceeded $400,000.

We have also a large and extensive rolling mill, owned and conducted by Messrs. Shreve, Paull, and M'Candless, gentlemen of great enterprise, who employ about one hundred men; they cut some ten to eleven tons of nails per week. An extensive and complete spade and shovel factory; seven or eight bell and brass foundries, where an almost unlimited amount of work is done; twelve steam saw mills, all of which are conducted on a very large scale—at most of them there are machines connected for cutting laths, shingles, &c.—5 to 7000 laths can be cut in an hour. At some of these mills they have a saw for cutting boards and timber, a circular saw, and a machine for planing flooring boards, all driven by steam power.

Two flour mills, one owned by C. Bradbury, Esq., and driven by water from the canal—they make sixty or seventy barrels every twenty-four hours. Connected with this establishment is an oil mill, for the manufacturing of linseed and castor oils; there is also a mill connected for grinding and sifting corn meal, large quantities of which are barrelled and exported. Our largest and most extensive flour mills in this section of the state are on the Big and Little Miami rivers, which empty into the Ohio above and below this city, and are situated from ten to fifty miles from Cincinnati; they manufacture, some one hundred, some one hundred and fifty, and some two hundred barrels, every twenty-four hours. All this flour is sent to this market by canal and waggons, and then exported to New-Orleans, the Atlantic cities, &c. The other flour mill in the city is worked by steam, and can manufacture, when in operation, one hundred and fifty barrels per twenty-four hours. I would stop here to remark, that there are about sixty steam engines in constant operation within the corporation lines, exclusive of those on our steamboats, and *all* high pressure; low pressure engines are not in good repute in the west.

A card manufactory, owned by M. P. Cassilly, Esq. where every description of machine cards are made. A large number of establishments for the manufacture of steam boilers, where hundreds of men are constantly employed. A stereotype foundry, and also a large and extensive type foundry, owned by N. Guilford, Esq. and others, where is manufactured every variety of type, printing presses, and every article connected with the printing business; there are eleven or twelve machines for casting type,

and sixty to seventy hands are constantly employed; they manufacture to the amount of some 50 to $60,000 per year.

A steam fire engine factory, owned and conducted by Messrs. Chase and Seymour. The engines manufactured by them are equal for power, beauty, and workmanship, to any manufactured east of the mountains.

A patent lever lock factory, by Messrs. Shawk and Fitz.

A steel saw and file factory, by Messrs. Garrard & Co.

A printing press manufactory, on an extensive scale, by S. Dickinson.

A saddle tree manufactory, machinery driven by steam, conducted by Messrs. Kendall & Co.

A clock factory, by Lerman Watson, Esq. where are manufactured clocks, both of brass and wood. The establishment is a large one; many hands are employed, and many clocks made, of every description.

A factory for rolling sheet lead, and drawing lead pipes, by steam, for hydraulic purposes.

A steam stone saw mill. This establishment is worked on a new principle, and is patented to the proprietor, (Mr. Jas. Henderson.) It cuts stone with great accuracy.

A white lead manufactory, by steam power, owned by James M'Candless, Esq.

A bark and leather rolling mill, owned by the Messrs. Clarks, and worked by steam. The manufacture of malt liquors is carried on very extensively in the city, and to great perfection. There are eight very large breweries, and the beer, porter, and ale, manufactured by them, is equal to any I have ever seen in the eastern cities. We have a great number of snuff and tobacco manufactories, last factories, candle and soap factories, &c. Hats, furniture, &c. are manufactured in great quantities, and exported for sale to Kentucky, Tennessee, Mississippi, Louisiana, and every State south and west of us.

My limited information on the subject of manufactories, as well as want of time, will prevent me from giving you a more minute account of the manufacturing and mechanical business carried on to a very great extent, and to equally great perfection, in Cincinnati. I have named a few, and only a few, of the largest establishments, those that have come to my mind while writing; there are many others, where great numbers of hands are employed, that I do not at this moment think of. Opposite the city, at Newport, is a large cotton bagging factory. It is on a very extensive scale, owned by an incorporated company, with a capital of half a million. They manufacture bagging, bale rope, twine and cordage, Kentucky jeans, cotton and woollen coarse goods, sheet lead, and pipe—all of which is carried on by steam power. The machinery, when in full operation, will use annually 450 tons of hemp, 850 bales of cotton, 95 tons of wool, and 200 tons of lead. The agent resides and transacts all the business of this establishment in Cincinnati. There is also, in Newport, a steam saw mill.

In Covington, also opposite to this city, is a large cotton factory, owned by C. Macallister & Co. of this city; they run 2500 spindles, and manufacture 300,000 lbs. cotton yarn per annum. Sixty hands are employed. The yarn is sold here. There is also in Covington a rolling mill on a large scale, a rope walk, steam flour mill, and a steam saw mill.—[Patriot.]

Steamboats on the Western Waters.

In a publication made by the writer of this article in 1829, on the interesting subject of steamboats, it was calculated, that from the time of their first introduction on the western waters in 1811, until that period, their number amounted to about three hundred and twenty-three. Their united tonnage was estimated at fifty-six thousand tons. From the best data which could be procured from the most intelligent sources, the original cost of these boats was five millions six hundred thousand dollars, and the repairs on the same number, assuming that none of them would last longer than 1832, was set down at two millions eight hundred thousand dollars. Now, although there were five or six boats built between the years 1811 and 1817, the latter period may be assumed as the epoch of their regular and successful introduction; in 1825 they were brought to their present state of perfection. It results, then, that the amount expended for the building and repairing of steamboats, in a period of about eleven years, was equal to eight millions four hundred thousand dollars. As the number of steamboats was increasing annually, no fixed amount can easily be assumed for the yearly expenses; but for the year 1829, the sum was fixed at two millions five hundred thousand dollars; if, then, five hundred thousand dollars be considered as a fair yearly average from 1818, the total amount of money expended on the shores of the western waters, up to 1829, inclusive, will be little short of fourteen millions of dollars. When it is considered that this circulation and expenditure of money was exclusively created by the introduction of the steamboat, the importance of this invention to the valley of the Mississippi may be conceived. It has produced an advance of prosperity that would have required more than a century to have realized in the ordinary progress of human affairs; it has produced a revolution in business little inferior in importance to that which followed the discovery of the art of printing.

On the 1st of January, 1824, an official list of steamboats, from an authentic source, gives the whole number of two hundred and thirty, whose aggregate amount of tonnage is equal to about thirty-nine thousand tons. Allowing the cost of building at a rate much lower than the rule adopted three years since, the capital now invested in this stock will exceed three millions of dollars. The expense of running may be put down nearly as contained in the following scale:

60 boats over 200 tons, 180 running days, at $140 per day, - - -	$1,512,000 00
70 boats from 120 tons to 200, 240 running days, $90 per day, - - - - -	512,000 00
100 boats under 120 tons, 270 running days, $60 per day,	1,620,000 00
Total yearly expense,	4,644,000 00

This sum may be reduced to the different items producing it, in the following proportions, viz.:

For wages, 36 per cent., =	$1,671,840 00
Wood, 30 per cent. - -	1,393,200 00
Provisions, 18 per cent. -	835,920 00
Contingencies, 16 per cent.	743,040 00

This result is truly striking to those who were accustomed to the state of things on our rivers within twenty years. The difference in the amount of wages paid is in itself very considerable; but the item of fuel is one created exclusively by steamboats; and when it is considered that nearly one million and a half is expended every year at a few points on the Mississippi valley, it presents a vast field for speculation. The immense forests of beech and other timber, unfit for agricultural purposes, were, before, not only useless, but an obstacle to the rugged farmer, who had to remove them before he could sow and reap. The steamboat, with something like magical influence, has converted them into objects of rapidly increasing value. He no longer looks with despondence on the denseness of the trees, and only regrets that so many have already been given to the flames, or cast on the bosom of the stream before him.

At the present period, the steamboats may be considered as plying as follows, viz.:

25, over 200 tons, between Louisville, New-Orleans, and Cincinnati, meas'g	8484 tons.
7 between Nashville and New-Orleans, - - - - -	2585 do.
4 between Florence and New-Orleans, - - - - -	1617 do.
4 in the St. Louis trade, - -	1002 do.
7 in the cotton trade, - -	2116 do.
57 boats not in established trades, from 120 to 200 tons, - -	8641 do.
The balance under 120 tons in various trades, - - -	14,655 do.
	39,000

In the New-Orleans and Louisville trade, the boats over two hundred tons make about one hundred and forty trips, in prosperous seasons; those of smaller size make from fifty to sixty trips. But to go into an estimate of the number of voyages made by the boats in the different trades is impossible, because no regular data are furnished, and the result depends upon a variety of contingencies.

Previous to the introduction of the steamboat in 1817, about twenty barges, averaging one hundred tons, afforded the only facilities for transporting merchandise from New-Orleans to Louisville and Cincinnati. These making but one trip within the year, gave the means of bringing up only two thousand tons. The present tonnage in this trade exclusively having been stated to be 8484 tons, gives the amount employed, amounting to one hundred and forty trips in the season, to be 1,187,760 tons: a cause capable of producing a revolution in sixteen years hardly equalled in the annals of history. The effects of these causes upon western commerce have necessarily been immense. The moral changes alone are felt throughout the west, and the effect on prices is almost incalculable: the imported article has fallen in a ratio equal to the increased price of western products. In looking back to the old means of transportation, we cannot conceive how the present demand and consumption could have been supplied by them.

To those who are acquainted with the early mercantile history of our country, when it was no uncommon thing for a party of merchants to be detained in Pittsburgh from six weeks to two months by low water and ice, the existing state of things is truly gratifying. The old price of carriage of goods

from the Atlantic seaboard to Pittsburgh was long estimated at from five to eight dollars for one hundred pounds. We have instances, in the last five years, of merchandise being delivered at the wharf of Cincinnati, from Philadelphia, by the way of New-Orleans, for one dollar per hundred.

It may not be useless or uninteresting to give an idea of the *mortality* among steamboats in a given time. It is not pretended that any decided inference can be drawn from this statement, or that the facts go to establish any fixed rule. But under the present situation of steamboat discipline and regulations, a tolerably fair conclusion can be drawn from it. Taking the period, then, of two years, from the fall of 1831 till that of 1833, we have a list of boats gone out of service of sixty-six: of these, fifteen were abandoned as unfit for service, seven were lost by ice, fifteen were burned, twenty-four snagged, and five destroyed by being struck by other boats. Deducting the fifteen boats abandoned as unseaworthy, we have fifty-one lost by accidents peculiar to the trade. In number, this proportion is over twelve per cent. per annum; in tonnage, the loss is upwards of ten per cent. Amount snagged, 3721 tons; burned, 2330 tons.

The foregoing calculations and statements afford a great field for speculation. It is evident that there is a vast amount of surplus tonnage, and, of course, the business at present is entirely overdone. Indeed, from a full investigation of the subject, a few years since, by a committee appointed for the purpose, it was fully ascertained, that although the benefits conferred on the valley of the Mississippi were incalculable, the stock invested in boats was, as a general rule, a losing investment—in many cases, a total sacrifice. In a few cases, owing to a fortuitous combination of circumstances, money has been made; but the instances are so few as not to affect the rule. Time may correct this evil; but in a business in which public interest and public safety are so much concerned, a little governmental interference and assistance might be useful, and ought to be tendered. Some legislative action, which might tend to arrest the fearful increase of accident, has long been a desideratum; but how this is to be applied, presents the great difficulty. An experiment, however, has been tried, which seems to hold out the prospect of success. We allude to the company which was formed in 1832–3, called the Ohio and Mississippi Line of Transportation. During the existence of this company, not an accident of any kind occurred to person or property. A perfect regularity in arrivals and departures was introduced, and as all the good boats were in the same interest, there was no foolish rivalship, and consequently no injudicious racing. How far the post-office department would be justifiable in aiding such an association we do not pretend to say, but in our humble view of the case, we consider the great interests of the west are much involved in the question; and when the great uncertainty and irregularities of the mail, which have hitherto distinguished the routes between New-Orleans, Natchez, and St. Louis, and Pittsburg, Louisville, and Cincinnati, are considered, something is expected. On the score of economy alone, the subject is worthy of the reflection of the general government. Probably nine tenths of the correspondence on the western waters is of a commercial character; the greatest portion of this is now transmitted, free of postage, by means of passengers: no one can prevent this. If a line of steamboats can be made interested in protecting the government, the general post-office would find it to its advantage to give liberal terms to such an establishment. N.

[Western Magazine.]

MANUFACTORIES IN PITTSBURGH.—The various manufacturing establishments of Pittsburgh are thus briefly enumerated in a late number of the Gazette of that city.

There are, says that paper, in the city of Pittsburgh, 16 "foundries and engine factories" of the largest denomination, besides numerous other establishments of less magnitude.

There are 9 "rolling mills," cutting two tons of nails and rolling eight tons of iron per day, on the average, and employing from seventy to ninety hands each.

There are 6 "cotton factories", with an aggregate of twenty thousand spindles, one hundred and sixteen power looms, and oen hundred and seventy hands.

Six extensive "white lead factories."

Five extensive "breweries," besides small ones.

Six "steam saw mills."

Four "steam grist mills."

Ten extensive "glass works."

Upwards of one hundred "steam engines in full operation."

There are, moreover, innumerable establishments for the manufacture of ploughs, timber, wheels, screws of all kinds, saddle trees, machine cards, bells, brass work of every description, locks, &c. &c. all manufactured extensively for exportation.

[From the Journal of the Franklin Institute.]

Report on Mr. Peck's Method of Propelling Boats.

The Committee on Science and the Arts, constituted by the Franklin Institute of the State of Pennsylvania for the promotion of the mechanic arts, to whom was referred for examination a Plan of Propelling Boats, invented by Mr. J. Peck, of Oakland, Jefferson county, Tennessee, report—

That the inventor proposes to employ what he terms a *multiplied crank*, attached to an axis made to revolve horizontally by some power not indicated in the sketch before us. The several wrists of the compound crank are to have either setting poles or hooks attached, one to each wrist, which poles or hooks are to act successively in urging the boat forward, by applying, when poles are used, to the bottom of the canal or stream, and when hooks are substituted, to a rack, or rope, extending the whole way on the shore. Coiled springs are to be placed in some part of each pole, to prevent the effect of sudden and violent impulses. When the pole is used to apply to the bottom, a species of foot, made of three or four strips of metal, attached by hinges to the lower end of the pole, are to spread out and present a large surface to the soft bottom of the stream, to avoid sinking deep into the mud.

The slight sketch in the hands of the committee does not show any provision for guiding and directing the poles, nor obviate the difficulty from unequal depths on the two sides of the boat, when poles are used on both sides.

The method appears less suited to a railway than the rack-rail already in use, in connection with toothed wheels, to insure the advancement of locomotive engines.

It seems unlikely that this plan will supersede the more simple methods already used for propelling boats, unless under very peculiar circumstances, and with some arrangements for obviating the practical difficulties which are not indicated in the sketch before us. By order of the committee.

WILLIAM HAMILTON, Actuary.

March 13, 1834

Report on Mr. B. Dugdale's Wind-Mill.

The Committee on Science and the Arts, constituted by the Franklin Institute of the State of Pennsylvania for the promotion of the mechanic arts, to whom was referred for examination a Horizontal Wind-mill, invented by Mr. B. Dugdale, of Burlington, N. J., report—

That the machine in question consists of an upright shaft revolving on a pivot in a step at its lower end, from which shaft, near its upper extremity, proceed, in one horizontal plane, ten equidistant arms; and from near the middle of the same shaft, proceed ten corresponding arms, also in one horizontal plane. Between each pair of corresponding arms, oblong rectangular frames of wire are hung, (at the extremities of the arms,) in such a manner as to admit of a horizontal vibration, through an arc of about ninety degrees. To these frames the sails are attached by small rings of wire, which can slide up and down the vertical bars of the frames.

The operation of raising the sails is performed by means of cords, one of which is attached to the stretcher at the upper end of each sail, and passes through a pulley at the extremity of the upper arm, along that arm to the shaft, and down the shaft to a collar sliding on the same. When this collar, to which all the cords are attached, is depressed on the shaft by means of a lever, all the sails are raised simultaneously. Again, when the collar is elevated, the cords become slack, and the sails drop by their own weight.

The vibratory motion allowed to the frames which support the sails, is so regulated that the sails on one side of the shaft present their surface to the wind while those on the opposite side offer their edges only: the efficiency of the machine is due to this arrangement.

Your committee deem it unnecessary to expatiate upon the merits of this wind-mill, or to discuss the patentee's claim to originality in his invention; but will merely refer all who are interested in the subject to the Repertory of Arts, and to the Edinburgh Encyclopædia, in which they will find described several mills operating upon the same principle, some of which closely resemble this one in the details of their construction. By order of the committee.

WILLIAM HAMILTON, Actuary.

March 13, 1834.

Report on Mr. Smith's Compass Needle.

The Committee on Science and the Arts, constituted by the Franklin Institute of the State of Pennsylvania for the promotion of the mechanic arts, to whom was referred for examination an Improved Compass Needle, manufactured by Mr. —— Smith, of Washington City, report—

That they have examined the needles submitted to them for that purpose by Mr. Trotter, together with the pamphlet of Mr. Smith, entitled "An Improvement," &c. and the notice of the patent for this improvement in the Journal of the Franklin Institute.

The claims in regard to the needles appear to be—

1. To a method of magnetizing them by percussion with what is called an electric rod.

2. To the removal of the influence of irregular magnetic distribution, and of local attraction, by "shifting feeders."

In regard to the particular method used by Mr. Smith, of conferring magnetism by percussion, the committee have no precise information, the needles not having been presented for their examination by the inventor himself, and no adequate description having been published of the details of his method. The general fact is well established in science, and testimony from various quarters speaks well of the application of it by Mr. Smith. Respecting the efficacy of the small pieces of soft iron, termed "feeders," shifting upon the magnet, and usually placed near the poles, the committee inquired and refer to the subjoined experiments for the data upon which their opinion has been formed. In these experiments they avail themselves of the kind assistance of Prof. Henry, of Princeton, who was, at the time they were making them, on a visit to our city.

The first object was to ascertain whether the feeders added to the intensity of the magnetic force in the needle.

For this purpose, the needle, furnished with its feeders drawn out to the marks on the ends, was suspended by a bundle of fibres of raw silk, free from twist. It was placed over a divided circle, that its deviation from the magnetic meridian might be observed. Drawing it out of that meridian it was made to vibrate, and the vibrations noted, when they had diminished so as to reach a certain extent. The mean of one hundred and twenty vibrations gave for the time of ten vibrations 80·47 seconds.

The weight of the magnet furnished to the committee was, without the feeders, 532·1 grains. The feeders weighed together 13·9 grains.

For these iron "feeders," two pieces of brass, of nearly the same weight and form, were substituted, that the mass of the needle might remain the same; the brass pieces were placed in the position formerly occupied by the feeders, and the needle was then vibrated.

The brass feeders were lighter than the iron ones by ·1 grain. From two series of experiments of one hundred and twenty each, the time of performing ten vibrations in this latter case was 79·87 seconds.

By the well known law expressing the relative horizontal intensities of the magnetism in these two cases,—namely, that the forces are inversely as the squares of the time of vibration,—the intensity in the first case was to that in the second as $79{\cdot}87^2$ to $80{\cdot}47^2$, or as ·98 to 1.

The force of the magnet, instead then of being increased by the feeders, is slightly diminished by them. Your committee must observe here, that it seems to them that this result is what should have been expected from placing a piece of soft iron within the poles of the magnet.

The next point to be examined was the efficacy of the "feeders" in preventing the effects of local attraction. This might be inferred from the results just given, but the committee preferred to subject it to direct experiment.

The same needle before used was placed upon a steel point, fixed in the centre of a graduated circle. A mass of soft ironwas brought to a measured distance from the needle, when the "feeders" were on; the deflection produced was noted; the "feeders" being removed, the deflection produced by the same mass in the same position was ascertained. These experiments the committee did not consider susceptible of the same nicety which was used in the first inquiry. The piece of iron was a rectangular plate, nineteen and three eighths inches long by six and three eighths wide, and weighing twenty-four pounds. The following results were obtained, and may be considered to approximate within about one quarter of a degree of the truth.

When the iron plate was placed with its longest side making an angle of about forty degrees with the axis of the needle,—the least distance from the south pole of the needle, six inches,—with the "feeders" on, the deflection was $18\frac{3}{4}°$; with the brasses on, the deflection was 19°. The plate was now brought to half the distance above stated: With the "feeders" on, the deflection was $31\frac{1}{4}°$; with the brasses on, $31\frac{3}{4}°$.

The proportional difference in the deflections with the feeders on and off, is, in the first case, one in seventy-six, and in the second, one in about sixty-four. These numbers are to be considered as merely approximate, but they serve to show that the needle is less deflected with the "feeders" on, than when they are off, a result agreeing with the conclusions to be derived from the first experiments, which showed that the magnetism was weakened by the "feeders." If the magnetism had been entirely destroyed, the deflection would have been nothing. The needle subjected to experiment was, in fact, a very weak magnet, and the feeders made it still more feeble.

In the Transactions of the Irish Academy for 1788, a plan is proposed "to preserve the magnetism, and consequently the *polarity*, of the needle," by having it "cased with thin, well polished, soft iron, or else to have it armed at the poles with a bit of soft iron." Capt. O'Brien Drury, by whom this suggestion was made, modestly submits his invention to the judgment of those who are qualified to appreciate its merits, and we conceive that this judgment may be considered to have been formed by the neglect of the invention during the forty-six years which have elapsed since its publication. In the plan before the committee, the needle is not entirely cased, but is furnished with shifting bands of soft iron.

By order of the committee.

WILLIAM HAMILTON, Actuary.

March 13, 1834.

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Report on Mr. W. Henderson's Chart of Commercial Weights.

The Committee on Science and the Arts, constituted by the Franklin Institute of the State of Pennsylvania for the promotion of the mechanic arts, to whom was referred for examination a Chart of Commercial Weights, submitted by Mr. William Henderson, of Philadelphia, Penn., report—

That this chart comprises scales of comparison of the weights of the principal commercial cities of Europe, and other parts of the world.

Scales of the ancient weights of France and Holland, being those most generally referred to in books of science, are also given.

On the left of the scale the names of the countries or cities are printed, and also the denomination of weight into which the scales are divided, as pound, rotoli, kilogrammes, &c. &c.

The divisions on the scales are numbered at every ten.

For facilitating the comparison of weights of different countries, meridional lines are drawn across the scales at convenient distances.

Where different weights are used in the same country, different scales are for the most part given, as in the United States of America, one scale is given of pounds troy, and another of pounds avoirdupois. The troy scale extends from 0 to 219 pounds, and the avoirdupois scale from 0 to 179 pounds; and, within this compass, the comparison of weights of different countries is made by taking equal distances on the respective scales, from 0, or from the nearest meridional line, to the weights given and required.

The committee are of opinion that the chart of Mr. Henderson will be found useful in commercial establishments, but would recommend that the meridional lines should be made to correspond with definite divisions of the avoirdupois scale, as by that arrangement the comparisons could be made by a simple inspection of the chart.

By order of the committee.

WILLIAM HAMILTON, Actuary.

April 9, 1834.

SILVER MINES OF BARNAOULE.—These are located on the confines of China, near the boundary between China and that country. There are thirty-two mines, wrought by eighty-two thousand persons, divided into three parties, so that the operations are never suspended night or day. The wages are very trifling. The whole of the silver is transported to St. Petersburg, for coining, and other purposes of the government.—[Scientific Tracts.]

ACTION OF TANNIN, AND SOME OTHER SUBSTANCES, ON THE ROOTS OF PLANTS. By M. Payen.—It has been repeatedly stated that trees soon die when the roots come into contact with the remains of the roots of oak trees cut down near them. This was supposed to be owing to the action of the tannin in the oak roots. M. Payen, after making a number of experiments on the subject, arrived at the following conclusions: 1st, Tannin, even in small quantity, acts deleteriously on the roots of certain plants: 2dly, Acids in small proportions are hurtful to germination: 3dly, Alkalies in small quantity are favorable to the progress of vegetation: 4thly, The neutralisation of the acidity developed during germination hastens its progress, and favors the ulterior developement of the plant. These experiments account for one of the useful effects of lime, or vegetable ashes, and of calcareous marl; and also for the unfavorable influence of alkalies used in too great quantity, or unequally distributed.—[Journal de Chimie Medicale, April, 1834, as quoted in the Lond. and Edin. Phil. Mag. for August, 1834.]

NEW-YORK AMERICAN.

DECEMBER 20—26, 1834.

LITERARY NOTICES.

Spirit of the English Religious Magazines; by Joseph L. Powell. Missionary Press: Burlington, New Jersey.—We have a specimen number of, or rather proposals for publishing, a new weekly sheet under this title, in small folio form, and at the price of $2 per annum. Among the British publications quoted from, are the British Critic, the Christian Observer, the British Magazine, the Christian Remembrancer, Christian Examiner, Eclectic Review, Presbyterian Review, &c. &c. We wish success to this undertaking; for without meaning to imply any inferiority in capacity on the part of American writers on religious subjects, it must be admitted, that in scholarship, learning and research, the European writers far excel them. The reason, we apprehend, is obvious,—the facility, in every part of Europe, of resorting to large and well furnished public libraries, a privilege invaluable in itself, and which in our country, with rare exceptions, is unattainable. Hence we think advantage will result from this republication. No better occasion perhaps than this will offer, to say with how much pleasure we have recently heard, that the Directors of our Protestant Episcopal Seminary—aware of the importance of a well selected and copious library—are now taking measures to induce the intelligent and wealthy members of that communion, to lend their aid towards the establishment of such a library. The object is a great one, and may, we hope, be greatly seconded.

Atlantic Tales, or Pictures of Youth; by Miss Leslie, 2d edition.

The American Girl's Book, or Occupation for Play Hours; by Miss Leslie, 2d edition.

The Evergreen, or Stories for Childhood and Youth; edited by Walter West, 2d edition.

The Value of Time, a Tale for Children; by Mrs. Barwell, author of Little Lessons for Little Learners, &c.

The Value of Money; by Mrs. Barwell, &c.

These books for children are all from the press of Munroe & Francis, Boston, and for sale by C. S. Francis here, and are all well adapted to the uses for which they are designed. Of the first three, which now come to us in second editions, we had occasion to speak in praise about this time last year, and we are glad to find that the public demand, as evinced by a call for another edition, ratifies our opinion. Of the last two, the "Value of Time" and the "Value of Money," we add that the subjects are well treated, and happily illustrated by incidents of daily occurrence in families and among young persons.

The Words of a Believer, translated from the French of the *Abbé de la Mennais*. New York, C. De Behr.—We published some two weeks ago an extract from this translation, while it was yet in the press, and have only now to add that it is throughout rendered in our language, with the spirit and fervor of the original. The prefatory notice by the translator the Rev. F. L. Hawks, apprizes us of what we had not before learned, that *M. de la Mennais* was first suspended as a Catholic priest, and finally excommunicated by the Pope for publishing these "Words of a Believer."

Poems, by Mrs. L. H. Sigourney, 1 vol. Philadelphia: Key & Biddle.—Our readers have experience, by the frequent introduction into our columns of the occasional poems of Mrs. Sigourney, how much we approve them, and will therefore anticipate the satisfaction we have in commending to their notice this collection of them, in a pretty volume, tho' not as accurately printed as it should be.

Rookwood, a romance, by W. Harrison Ainsworth, from the second London edition; 2 vol.—Philadelphia: Cary, Lea & Blanchard.—No one who reads these volumes will deny the talent and skill which, as a writer and painter, the author exhibits, but many will regret with us that so much of them should be wasted on a highwayman and his horse, and the slang of thieves and murderers. *Paul Clifford* was an unlucky original, for its success has tempted imitators, among whom certainly the author of Rokewood treads most nearly in the steps of the master of that school.

The Early Years of the late Bishop Hobart; by John McVickar, D. D. New York: Protestant Episcopal Press.—Some proof sheets of this forthcoming volume have been put into our hands. We cannot more satisfactorily explain the nature and aim of the publication, than by copying entire the preface of the editor.

The perusal of the letters and papers of the late Bishop Hobart, undertaken with a different view, have led to the following narrative. It may be that in the publication of it, the author, or rather the editor, for letters constitute the main portion, has overrated the interest of the reading public in a life already before them, and a character which, whatever be its excellencies, has long been familiar to the members of his own communion, while to those beyond, it can hardly be said to offer such claims as render the biography of public men at all times justifiable.

In the face of all these difficulties the editor has ventured to publish, and can now only state the feelings which have led him to it. When he began the perusal of these early letters, they seemed to him but as boyish effusions of but little value, and no interest beyond the family circle to which they related; but as he proceeded in his task, their number and minuteness began to give life to the picture they presented; one by one the features of character came forth, until by degrees they embodied themselves into a beautiful portraiture of an affectionate and generous youth—full of ardor and native piety, and devoted to every noble and benevolent pursuit.

This is the editor's first apology, since if these impressions be just, such a picture faithfully given cannot be without both interest and value. Virtue and piety want no reflected lustre from a great name; they are themselves the pure gold, and truth and sincerity the only stamp they need to give them currency.

The inclination thus excited to publish, a further consideration converted into resolution. It was this: Bishop Hobart's character was in one respect greatly misunderstood by those who knew him only in his public course. The untiring energy with which he devoted himself to official duty, was reputed by many to be personal ambition; and the unyielding firmness of his opinions as a Churchman, turned into an argument against his vital piety as a Christian. The native humility of his heart, the depth of his devotional feelings, the evangelical tone of his retired piety, were matters either wholly unknown, or else placed to the account of professional duties. Now the correction of such false opinions is a debt due alike to the reputation of Bishop Hobart, and to that of the church over which he presided; and in no way perhaps can it be more effectually done, than by the exhibition of him in the simplicity and open sincerity of youth; in days when there were no ambitious ends to gain, or professional proprieties to support, and in which neither fear nor favor can be supposed to have operated, to blind the judgment of those around him as to his real character. If we then find him as a boy, what he afterward was as a man, active, ardent, fearless, and devoted; fervent in feeling, but wise in action, bold in duty, but childlike in piety, yielding in matters of expediency, but uncompromising in principle, gathering around him wherever he went an attached circle of friends and followers, and using his influence over them to the wisest and best of purposes—that of advancing them in knowledge and virtue, and above all, in that holy faith, which from a child appears to have been his own guide and instructer; and if all this be found not in the recollections of partial friends, but in original documents which personal affection has preserved, then may we fairly answer all such doubts as to the genuineness of his virtues, by an appeal to the unpretending, but unsuspected narrative of his 'Early Years.'

With this explanation the work is respectfully submitted.

Columbia College, Oct. 15, 1834.

After such an introduction, it were needless for us to add, that the volume it precedes cannot fail to be of great interest; and appearing as it will about the New Year, will be deemed, we are sure, by very many, both by those who give and those who take, a most appropriate gift for that season.

A Sketch of Chinese History, Ancient and Modern, &c. &c.; by the Rev. Chas. Gutzlaff, now and for many years past a resident in that country. 2 vols. New York: J. P. Haven.—Those of our readers who recollect the former publication of *Gutzlaff*, will look eagerly to these volumes. In one respect they will be disappointed; for the charm of personal adventure cannot be imparted to an historical narrative. As a summary, however, of the history of an extraordinary nation, compressed within reasonable limits, carefully compiled, and verified in modern instances by the personal knowledge and experience of the author, this is a work of permanent utility and value.

Mr. Gutzlaff treats as unfounded, the exaggerated notions entertained both of the intelligence and the power of the Chineses, though he concurs fully in the estimates made of the populousness of the country; on which head he thus speaks:

Whilst giving the enormous sum of 369 millions as the actual number of inhabitants in China, the author is fully persuaded that the last imperial census is as near the truth as it can be ascertained. Those parts of the empire which he has visited are extremely populous. He has taken the trouble of examining some parts of the census, and numbering the houses of small districts, and has invariably found that the population was underrated. The Chinese are naturally a very prolific people; few individuals only live a single life; early marriages, which seldom prove barren, are general throughout the empire. Government has always encouraged the matrimonial estate, and their ancient institutions devote a childless man to contempt. Thus the population must increase and multiply on a progressive scale. As the wants of the common people are so very few, and their habitual industry render every barren spot tributary to them, we may easily conceive that so large a population can find the means of subsistence.

Concerning the state of knowledge, he justly remarks, "When we see in Europe the press teeming with new publications, we ought rather to be astonished that among three hundred and sixty-seven millions of men, there is not one original writer, nor has there been for many years."

Both as a sample of the style of the writer, and as instructive in itself, we give the annexed sketch of the origin of the Turks, and of their introduction into China:

At the foot of the Imaûs, the Turks, a small, insignificant tribe of slaves, occupied with digging iron, served the great khan of the Geougen. Their first ancestor had been suckled by a she wolf; and thus was the savage bravery transferred into the veins of all his posterity. Born to slavery, they were cheerful under servitude, until it became intolerable. Bertezena, their first leader, harangued his countrymen, pointed out to them their abject state, and exhorted them to shake off the yoke. This horde of smiths and armorers sallied forth; and, with all the energy of a nation emerging from barbarism, conquered several neighboring tribes. To remind the nation of their humble origin, the prince, and leader himself, with his nobles, heated annually a piece of iron, and took with their own hands a hammer to beat it.

When their power was increased they demanded their freedom from their own masters; and, to secure this, Bertezena asked the daughter of the great Khan in marriage. His request was rejected with the utmost disdain; in revenge for which, the Turks attacked their old master, and defeated his army. The Chinese prince of Wei, in She-se, a bitter enemy of Geougen, took the conqueror under his protection; and, to remunerate the services he had done him and China, by subduing an inveterate foe, he gave him his own daughter in marriage.—Nomades, like the Huns, they despised the arts of civilized life. One of the successors of Bertezena, whom the Chinese call Moo-kan, was allured by the luxuries of China, and wished to build villages and cities; but this design was defeated by one of his counsellors, who said, "The Turks are not equal to one-hundredth part of the inhabitants of China.—

If we balance their power, and elude their armies, it is because we wander, without any fixed habitation, in the exercise of war and hunting. Are we strong, we advance and conquer; are we feeble, we retire, and are concealed. Should the Turks confine themselves within the wall of cities, the loss of a battle would be the destruction of their empire."

Their religion was vague: they worshipped the gods of the air, the wind and the rivers. Their laws were rigorous and impartial: theft was punished by tenfold restitution; adultery, treason and murder, with death. The punishment for the inexpiable guilt of cowardice was horrible. The throne of their chief was turned towards the east; and a golden wolf, mounted on the top of a spear, guarded the entrance of his tent. As soon as a youth was capable of bearing arms he received and wore them till his death. Their armies were as numerous as swarms of grasshoppers; and, within the space of fifty years, they had united under their standards numerous Tartar tribes; and were connected, in peace and war, with the Romans, Persians, and Chinese; having conquered the White Huns on the plains of Bokhara and Samarkand, they carried their victorious arms to the Indus. But though they thus extended their conquests in every direction, their chief still kept his court in the ancient abode of their ancestors, at the foot of the Imaüs. Had not their extensive empire been divided into five different kingdoms, they might, perhaps, have subjected the world to their sway; but these divisions created continual wars, and reduced the power of those wild conquerors to nothing; and five independent kingdoms were erected upon the ruins of the Turkish empire. The founder of the Tang dynasty, trembling at such a neighbor as the Turks, treacherously delivered up to the Hosona a Tartar prince who had taken refuge in China. When the Turkish ambassadors arrived at the Chinese court in 619, they were received with due honors; and heaven's son stooped greatly from his dignity to conciliate their goodwill. Indeed, it is said that the heroic Chinese fought against them with gold and silver lances,—a formidable weapon!—and thus averted an invasion which might have fixed the Turks in China, and freed Europe from this scourge. But, directing their vast martial force towards the West, (guided, perhaps, by a higher hand, which disposes of the empires of the world,) they produced one of those great revolutions which have had a lasting influence upon all the countries we inhabit. The Mongol conquests ceased in Europe with the conquerors who made them, whilst the baneful influence of Turkish dominion is still felt; and though the foundation of this strong hold of fanaticism has been undermined, though the Turkish empire, now in a state of dotage, is tottering to its basis, it is still suffered to exist.

It is easy to perceive in this sketch the inspiration drawn from the pages of Gibbon.

It is remarkable, that though often assailed by the Turks, the Chinese never were subdued by them, but on the contrary frequently defeated their elsewhere victorious armies.

The superstitions and sects of the Chinese are all noticed in their proper places. One of their philosophers, *Laou-keun*, gives this account of the creation: "Reason produced One, One produced Two, Two produced Three, and Three produced all things."

We would willingly dwell more at length upon the contents of these two volumes, but our limits forbid. We conclude, then, with the observation, that *Gutzlaff* here reinforces the opinion, so confidently expressed in his former publication, that decision only on the part of foreigners trading with China is wanting, to bring this absurd, lying and jealous nation, to the same courtesy of intercourse which exists among other peoples.

At the close of the second volume, there are a series of tabular statements, exhibiting the details of the English and American export and import trade with China for many years. These will be found of interest to merchants.

ANCIENT MINERALOGY, or an inquiry respecting Mineral Substances mentioned by the Ancients, &c. &c., by N. F. MOORE, LL. D, Prof of the Greek and Latin Languages in Col. Coll.; 1 vol.; N. York, G & C. CARVILL & Co.—This is a very scholarlike essay, in which the erudition of ancient and modern times is made conducive to the entertainments and instruction of the reader of taste. As a *science*, the ancients knew nothing of mineralogy; yet they had a knowledge of many of the minerals now in use, and a skill in the working of them not surpassed, and in some instances—particularly that of engraving precious stones—not equalled at this day. This little volume exhibits satisfactorily, the state of knowledge in remote antiquity, and brings it down to the present time, when mineralogy has asserted its rank almost as an exact science. To the curious inquirer in natural history, as well as to the general reader, there is much attractive matter in these pages.

FRANCE, SOCIAL, LITERARY, AND POLITICAL. By H. L. Bulwer. 2 vols. Harpers.—This is, we believe, the first work of the brother of the popular author of 'Pelham,' that has been published in this country. It will procure him many readers, and some warm admirers. The style is sparkling and epigrammatic, and though the severe critic might characterize it as meretricious, it is, withal, agreeable. It often amuses by its piquancy, and sometimes rises to the dignity of eloquence. The materials of the work are various, entertaining, and instructive. The author's researches, indeed, have been rather diversified than deep, and the reader should be guarded in adopting many of his opinions; for when a writer aims so much at point, there is no knowing how often truth may be sacrificed to antithesis. And there is too much of that air of coxcombical superiority which the English are so fond of assuming when speaking of other peoples, and particularly of the French. We have already given several extracts among our daily miscellanies, which indicate the anecdote and lively sketches of character scattered through the work. We now quote something of a graver nature, a singular and most interesting conversation that took place at a fête given by the Duke of Orleans, a short time previous to those events which made him Philippe I:

It is given as M. de Salvandy has himself related it.

"It took place in consequence of the bon-mot—'*C'est une fête toute Napolitaine, monseigneur; nous dansons sur un volcan.*" The prince (Duc d'Orleans) standing behind or near the 'fauteuils' of the princesses and the king, seized my arm quickly as I said this, and doing me the honor to draw me towards him, 'That there is a volcano,' said his royal highness, 'I believe as well as you; and, at all events, the fault is no fault of mine. I shall not have to reproach myself for allowing the bandage to remain unlifted that covers the king's eyes. But what can one do? Nothing is listened to, and God only knows where this will lead us!'

"'Far! monseigneur, it will lead us far!—that is my conviction. I feel also in the midst of this fête so animated and so beautiful, a profound sentiment of sorrow; I ask myself where in six months will be this brilliant society? where will be these crowds so joyous? that princess so gay (alluding to Madame la Duchesse de Berri, who was 'galloping' with Count Rodolph d'Appony)? where, in fact, will be our country? Within six months we shall probably be divided into the proscribed and proscribing."

"'Certes,' answered his royal highness, 'I do not know what will happen—I do not know where those will be you speak of in six months; but I know where I shall be, whatever comes. I and my family will remain in this palace; it is enough to have been twice an exile through the faults of others. Whatever be the dangers, I shall not move from this spot; I shall not separate my lot and the lot of my children from the fate of my country. What I say to you I make no secret of elsewhere—lately, indeed, at Rosny, I said pretty fully what I think of all this; and there is the King of Naples, who was with us, and who was clearly of our opinion. That prince, whom you see so broken, and who is nevertheless four years younger than I am, is a man of a good deal of sense; circumstances oblige him to be an absolute king (Austrian bayonets), but his own inclinations would have led him differently. He has made I assure you, some very sensible observations. By-the by, we spoke at Rosney of some remarks of yours."

"I said that 'I was convinced that the monarchy was falling, and that I was not less convinced that the fall of the throne would compromise for a hundred years the prosperity and the liberty of France.'

"'In afflicting myself as much as you can do,' said the prince, 'at the conduct which the king is pursuing, I am not so frightened as you are at its probable results. There is in France a strong love of order—that France which the government will not understand, is excellent, is admirable; see how the law is respected amid so many provocations!—The experience of the Revolution (1789) is present to all; its conquests, its follies, and its crimes are detested. *I am convinced that a new revolution would in no respects resemble that which we have seen.*'

"'Monseigneur, that is to believe in a revolution of 1688. But when England departed from the path of legitimacy, the aristocracy remained as an element of order; with us there is no aristocracy to be called an aristocracy, and what there is will perish with the Bourbons; every thing will again be smoothed down to a level, and I do not think a pure democracy capable of founding any thing that is to have duration.'

"'Monsieur de Salvandy, you do not do justice to the effect of that diffusion of intelligence which follows the diffusion of fortunes. The world has completely changed since forty years; the middle classes are not all society, but they form its force, they have a constant interest in order, and they join to that knowledge which communicates the wants of a great empire that power necessary to combat and suppress bad passions. *Jacobinism is impossible where the greater portion of the community have possessions to lose.*'

"'I have always thought, monseigneur, and I still maintain the same opinion, that it is a dangerous error to consider that property alone is the guarantee of a desire for order. Property with us is so divided that it has its multitude, envious of every superior, and inimical to every power. I should fear that that multitude, being the most numerous party, and always disposed to satisfy its hatred of the higher classes, would soon, by its levelling schemes bring us to anarchy, if anarchy were not the commencement of a new régime.'

"'Monsieur de Salvandy, believe me, all that the country wants is the sincere establishment of a constitutional government; this is all it asks. The evil has arrived from the impossibility, among certain persons, of accepting at once, '*et de bonne foi*,' all the results of the Revolution, and of the Charta more particularly. The faults of the last Revolution sprang from the false distribution of rank and fortune, which was united with the wretched education that characterized the ancient régime. We have left all that behind us. My political religion consists in the belief, that with constitutional opinions all may be directed right. These principles I have always held. When an exile at the court of Sicily, I was asked, in order to obtain my wife, to make certain concessions. I declared that my opinions were invariable, that in those opinions I would bring up my children, and that I would do this as much for their interest as for a love of truth. The misfortune of princes is, that they do not know the people, and that they entertain and cherish ideas and opinions different from those whom they govern. This is why I gave a public education to my sons; and in every respect it has succeeded. I wished them at once to be princes and citizens. I wished that they should not deem themselves a favored race; that they should not participate in the habits of a corrupt circle; that they should not always have before their eyes the veil of a court education; that they should not be bound by the tastes of childhood to those interested in deceiving them, and moreover frequently deceived. Such has been my object; and I am certain that I have to congratulate myself on the course I have pursued.'

"The Duke of Orleans was at first standing; he afterwards made me sit down by his side; we were exactly behind Charles X., who might have heard every word we were saying."

Let us do justice to the King of the French! Henry IV. never delivered a speech which contained so much goodness, sense, and truth as there is to be found in these remarks; they offer a fair justification of Louis Philippe's conduct to the family he dethroned; they would offer the best security to the people whom he governs, if we had not unfortunately so many examples of the corrupting influence of power, of the best heart being changed, and the understanding blinded by a successful ambition.

M. Maroncelli has at length completed his arrangements for publishing by subscription an English translation of "My prisons," by *Silvio Pellico* with his own "additions" to the work of his fellow-prisoner and fellow-sufferer.

The translation heretofore given to the public from an English edition was feeble and inaccurate: that now proposed is from a pen that will do justice to the feelings, which the affecting and improving Record by *Pellico* of his ten sad years of imprisonment, must impress upon every generous heart. The additions by *Maroncelli* have never appeared in English.

The whole will now be given together in two well printed volumes.

We shall take pleasure in receiving subscriptions for the work at this office.

FOREIGN INTELLIGENCE.

Later from France.—By the *Normandie*, our Paris papers come down only to the 14th ult. inclusive, and therefore, excepting a short paragraph from the *Journal des Debats*, of the 14th, make no allusion to the dissolution of the Bassano Ministry, which lived only as long as the last Revolution—*three days!*

The Paris papers of the 15th, (extracts from which we take from the Courier and Enquirer,) leave no doubt that that Ministry *was* dissolved, although the notion that its breaking up had any thing to do with our affairs, is unsupported by any extracts from the Paris papers of the 15th, or as far as we can learn by any letters, and is moreover in contradiction with the surmises of the French press generally, which seems to unite in ascribing the sudden exit of the scarcely installed Ministers, to the discovery, that the "*pensée immuable*"—as they call the resolute purpose of the King, to be his own Prime Minister *in fact*, let who may occupy the post *nominally*—would not hear of any concessions to the spirit of the Revolution of July. "The new Ministry will be the restoration of the Revolution of July," was the expression of the Duke of Bassano, which the King at once (according to the Journal des Debats) resented as an insult. However this be, it is clear to us that our affairs had no influence either in the formation or dissolution of the Ministry.

It seems to us to be very much like the breaking up of one of the Cabinet *Units* at Washington—the Chief was dissatisfied and so willed it.

The Chambers were still to meet on the 1st, but the dissensions and uncertainty which the recent changes manifest, render it perfectly clear to our understanding that no *early* effort would be made to obtain an appropriation for the treaty with this country.

[*From Galignani's Messenger of Saturday, 15th Nov.*]

The Ministry.—The *Moniteur* of this morning is still upon the dissolution of the Cabinet.

The *Journal des Debats* says:—The Minister of the Interior, President of the Council, the Minister of War, who has also performed the duties *ad interim* of Minister for Foreign Affairs, the Ministers of the Marine, of the Finances, and of Commerce, yesterday, tendered their resignations to the King, which his Majesty accepted."

The *Constitutionel* mentions only four Ministers as having resigned, the Duke de Bassano, and Messrs. Teste, Passy, and Charles Dupin. It adds: "On Thursday evening, after M. Dupin's dinner, the Ministry still existed and assembled in Council. There the first important question submitted to the new Cabinet, the bill for 25 millions claimed by the United States, was discussed. It appears that the Doctrinary *coterie* although expelled from the Cabinet, was still powerful enough to give ascendancy to its opinions, since the bill for 25 millions, precisely as it had been rejected by the Chamber, was recommended.

This was enough to enable the new Ministry to foresee what was in store for it in future. Moreover, many circumstances contributed to show that obstacles of every kind would be raised. The cold reception, and the bustling intrigues of the Palace, diplomatic susceptibilities artfully excited the hostile attitude of the Doctrinary press.

The pitiful conspiracy on 'Change for the purpose of crushing the Cabinet by a fall of 20 centimes, perhaps, also the presence in the Council of a Member of the former Ministry, all had concurred to excite distrust, that uncertainty of the future, which was again increased by the want of homogenity among the new Members. One of the Ministers, whom the Opposition hailed as a guarantee in the Council and as a pledge of better times, M. Passy, we say appeared too much absorbed by these obstacles. Upon these however, he ought to have reckoned in accepting his appointment.

The anathema hurled against the Ministry, by one of the gravest organs of the Opposition (the *Courrier Francais*) seemed to have produced an unfavorable impression on the mind of a man who nevertheless had been accustomed to sacrifice to his convictions the transitory sweets of popularity, which can be only rendered durable by knowing how to lose it, in case of need, in order to recover it anew. Be this as it may. M. Passay thought he saw, and we are on this occasion of his opinion, a contradiction between the principles which he maintained, and the course into which he was to be led by this disastrous bill. He firmly stated that he could not consistently present as a Minister a bill which he had opposed as a deputy. He insisted, with the most honourable eagerness, that it would be flying in the face of the Chamber to reproduce, without a single modification, a law rejected by the most significant majority.—Messrs. Teste and and Charles Dupin seem to have supported M. Passy in this struggle, wherein the word 'resignation,' which is the *veto* of every honest Minister, was several times pronounced. The Council was broken up, and Messrs. Teste and Passy having previously concerted together, sent in their resignation at midnight. M. Charles Dupin, on hearing the fact very early on the following morning, sent in his own, which was followed by that of the Duke de Bassano. Messrs. Molé and Theirs are commissioned to recompose this Cabinet, twice found to be impossible. To complicate the embarrassment of the affair, M. Bresson, whose acceptace was guaranteed, is doubtles on his road to Paris, and will learn on the frontier that there is but one resignation more to give in. His return to Berlin is impossible, for he would be overwhelmed by ridicule, although he is innocent of this deception, in which France has participated with him."

Tea—The duty on tea in England amounts to adout seventeen millions of dollars.

Capt. Ross the Hero of the North has at length discovered something in England even more attractive than that which he reached during his last expedition. The worthy Captain has recently married a young and accomplished lady. With Captain Macheath the great Discoverer may sing—

"Were I laid down on Greenland's coast," &c

A Monument to Kean is about to be erected in Winchester Abby. It is to cost £1000, of which £400 had been already subcribed.

Osman Pacha, Grand Admiral of the Egyptian fleet, died on the 12th August at Constantinople, of the plague, after five days illness, in the 38th year of his age. The Sultan, who appreciated the extraordinary talants of the deceased, and had placed in him the utmost confidence, had intended to raise him to a very exalted station.

By the melting of the ice on the Glaciers, in the Canton of Uri occasioned by the unusual heat, the body of a young hunter, who perished thirteen years ago, was discovered on the summit of a peak.

Late and Important news from Europe.—The Liverpool packet ship *George Washington*, Holdridge master, of 24th ult., brings us London papers to the 23d (Sunday) inclusive; and their intelligence is of unusual interest, alike to politicians and merchants; for while cabinets have been going down, markets have been going up,—but first of politics.

To begin with France, where from peculiar circumstances, the ministerial mutations have become of unwonted interest in this country. The three days reign of the Duke of Bassano and his colleagues has been followed by the restoration to power of all those ministers whom that short lived cabinet succeeded, except the President of the Council, Marshal Gerard. An entirely new man, as a politician, *Mortier*, Duke of Treviso, takes the war department and the station of President of the Council. He is a soldier of the Napoleon regime, who will be content to hold the rank of Premier in subordination to the King, who in reinstating this *doctrinaire* cabinet, after due submission on their part, has more than ever established his unconstitutional pretension, to be the real and efficient prime minister.

The only actual appointments in the new Cabinet, are Lord *Lyndhurst* as Lord Chancellor, and the Duke of Wellington as Home Secretary, and filling *ad interim* all the other posts in the Ministry. Until Sir Robert Peel, at the moment of this crisis "picture-hunting in Italy'," could be heard from, no further appointments would, it was supposed, be made, although the list of *probable* ministers may rpove accurate.

From *Spain*, we have no additional accounts of much interest—though the Queen's cause seems a *little* brighter. Even that, however, will suffer discouragement by the Tory ascendancy in England.

[*From the Philadelphia U. S. Gazette*]

Very late from Jamaica.—By the arrival at this port of the brig Pilot, Capt. Milton, we have been put in possession by the kindness of a friend, of files of the Kingston Chronicle to the 28th ult.

A committee of the Legislature has had under examination a large number of property holders, as to the effects of the new apprentice bill. It seems to be the opinion, that under some kind of management the system might have succeeded; but under existing circumstances, there appears no hope of success, and the cultivation of sugar must be given up.

In St. Jago on the 21st of November, eleven blacks, convicted of insubordination and insolence towards their employers, were taken to the market place and publicly whipped, under the direction of the special magistrate.

A motion was about to be made, to petition the King to repeal the non-intercourse act between Jamaica and St. Domingo.

A Baptist clergyman named Abbot, was brought before the Legislature to testify, but he positively refused, and was committed to prison, whence he was once or twice brought by a writ of habeas corpus, but as often returned.

We have been informed that the apprentices on two estates in St. Ann's, (one of them named Windsor,) have struck work, and are at this moment in a state of rebellion. Should this be the case, in what light can the unfortunate inhabitants of Jamaica view the line of conduct pursued by the Executive? When we reflect upon the dangers with which we are threatened, and consider that the *actual* and lamentable state of the country has repeatedly been submitted to the consideration of his Excellency the Governor—that he has been seriously advised, nay, urged, by our Assembly, to adopt the only means by which the island might yet be saved from impending ruin, and perceive that his Excellency is still, even at the *eleventh* hour, apparently *deaf* and callous to the representations and advice of those who *value* their lives and *property*, we cannot but deplore whatever his Excellency's "secret instructions" may be, that he ever came to Jamaica—for we have every reason to fear, that the apprehensions entertained and expressed by the Assembly, are now on the eve of being realized.

SUMMARY.

The Sons of the Pilgrims celebrated the anniversary of the landing at Plymouth, in a most cordial and becoming manner on Monday.

The oration of *H. R. Storrs* was that of a statesman and a scholar—deducing from the past, examples and warnings for the future, and showing, by the instance of the settlers of New England, how indissolubly good government, liberty and happiness, are connected with institutions based upon general education, morality and religion. We hope Mr. Storrs will be required to publish this oration.

The dinner at the City Hotel was in all things agreeable—even to the few grains of parched corn on each plate, to remind those then about to feast luxuriously, of the straits to which the noble minded

and constant passengers in the *Mayflower* were at one time reduced.

The Hon. George McDuffie was inducted into office as Governor of South Carolina on the 11th inst.

The Globe informs us that gold has been procured to pay every member of Congress the full amount of their pay and mileage.

The Philadelphia United States Gazette speaks in terms of commendation of two elegant swords, manufactured by Mr. T. Fletcher, of that city, by order of the State of Maryland. The inscription on each makes known the object of the State in causing them to be made, and also their destination. On the hilt of one is the following inscription: "Presented to Col. NATHAN TOWSON by the State of Maryland, his native State, in consideration of his gallant services during the late war with Great Britain." The whole mountings of the sword are of solid gold, the scabbard is of silver gilt. On the hilt is a scroll, bearing the words Caledonia, Chippewa, Bridgewater, Fort Erie; and etched upon the blade are, Black Rock, March, 1813; Stony Creek, Queenstown, September, 1813; Fort George, Forty Mile Creek, Chippewa, October, 1814. On the scabbard are massive chasings, representing the battle of Chippewa and of Fort Erie; the arms of the State of Maryland, with warlike devices.

The other sword has on the hilt the following inscription:—"Presented to Captain John Gallagher of the Navy, by the State of Maryland, his native State, in consequence of his gallant services during the late war with Great Britain." The whole mountings are of gold. On the blade is an etching representing the President engageing the Endymion. The hilt bears naval devices. On the scabbard is a chased representation of the engagement between the Macedonian and the United States. Both swords are admirable specimens of workmanship.

The case of Alexander Brown & Sons, of Baltimore, for the use of Oliver, vs. Susan Decatur, was tried at Washington a few days since, and a verdict rendered for the plaintiffs. By this verdict Mrs. Decatur will have to refund the sum of fifteen thousand dollars loaned to her.

The Report of the War Department comprizes many interesting particulars respecting the army, public roads, fortifications, &c., from which we shall from time to time furnish extracts.

The returns accompanying the Report make the whole strength of the United States Army, including officers and privates, 6,597. According to the organization for 1834, it should have comprised an aggregate of 7,198. The whole number of men enlisted into the service from 1st of January to 30th September, 1834, is 2,111.

By a late official documentof the city councils of Boston; it appears that out of 2767 wells in that town, seven only furnish soft water, fit for washing.

One of 1585 of the population of France is deaf and dumb; in Russia one in 1548; in the United States, one in 1538.

The Tallahassa Floredian says, there is a person in this County, who, with the assistance of one servant, has made this season, 20 bales of Cotton, worth at present prices upwards of two thousand dollars.

In the Legislature of Missouri resolutions have been offered, prohibiting the introduction into that State of slaves for sale or hire, by others than residents, or persons about to become so, and for compelling masters to treat their slaves with humanity.

Slaves in Cuba.—In Tudor's tour in Mexico and Cuba it is stated that the number of slaves imported into the Island of Cuba since the year 1800, is upwards of two hundred and sixty thousand!

Gallantry of the Vermont Legislature.—Among the laws passed at the late session of the Legislature of Vermont, was one, exempting females from liability to imprisonment for debt.

No Bad Idea.—The Eastern nations believe that there is not a happier state of existence than that of living eternally in a delicious garden, sorrounded by beautiful women, reposing on flowers.

"Was'nt that well done," said a waterman on the Susquehanna as his raft struck one of the piers of the Harrisburg Bridge, "there's five on 'em and I only hit one."

United States frigate John Adams.—We have been repeatedly called upon since the publication of our paper on Saturday, by the friends of the surgeon of the John Adams, to know whether our translation from the French paper was correct, in which we stated that the quarantine officer placed on board of her at Toulon had died, or that of two of our cotemporaries the *Gazette* and *Commercial*, who said that the *physician* on board of her had died. We replied, and we have been requested to give publicity to the fact, in order to relieve the anxiety of the friends of the surgeon at a distance, that our translation was correct—the term used in the original being the *garde de santé*, the person employed on board each vessel to prevent a violation of the quarantine laws. It is singular that a similar error to that made by the Gazette in the morning, should have been made by the Commercial in the afternoon, but so it appears.

We are further requested to state, that the friends here of the surgeon of the John Adams have received letters from him dated Toulon the 7th November, at which time he was in perfect health.—[Courier.]

Mr Benjamin Knower, of Albany, who failed to so large an amount last spriug has given notice that he is now ready to meet demands against him.

Honors to the Dead.—A writer in the National Intelligencer under this head, relates the following anecdote:—When the body of Commodore Decatur was placed in the vault of Mr. Rarlow, (now Col. Bumford's) at Kalorama, and when the multitude which accompanied the funeral had dispersed, he observed a solitary individual, in a salor's dress, lingering near the place. He walked up to him, and asked him what he wanted; the sailor replied that he "only wished to look a while at the place where they had laid the *mainmast* of the Navy!" and walked off. Who could have spoken a better eulogy? It was the eloquence of nature and of truth.

A good Hall.—A short time ago a fisherman at Chalons, on casting his net into the Seine, drew up a bag containing three hundred gold medals on all of which appears the head of the emperor Titus. The fisherman cannot say with the emperor, "I have lost a day."

In 1787 Louis Phillipe, visiting the prisons of St. Michel, found in one of the dungeons an iron cage, which was reserved for state prisoners. The young Prince enraged, broke it in pieces.

SINGULAR CONSECRATION.—We learn from the Missouri Catholic Telegraph, that the New Catholic Cathedral at St. Louis, was consecrated on Sunday, October 26th, by the *discharge of Cannon and ringing of Bells!!* The same paper mentions that there were present at the consecration four Bishops twenty eight Priests, and a considerable number of young aspirants to the holy ministry.

Lamentable Suicide.—A young gentleman named Nicholson, educated at one of the English Universities, highly connected in that country, and having many respectable connexions in this city, drowned himself yesterday morning in the North River between Hoboken and Courtlandt street. He had been disappointed of his usual remittances from England, and was involved in debt to a considerable extent for board and pecuniary accommodations from friends; being a young man of a high sense of honor and very excitable temperament, had often declared that he could not survive the disparagement into which the negligence of his friends at home had thrown him with his generous acquaintance here. He purchased a phial of the sulphate of morphine in Canal street, went with some friends on an excursion in a sail boat to Hoboken, drank a large quantity of brandy and water there, and on stepping on board the boat on his return, he was observed to swallow the contents of the phial. Within three or four minutes he suddenly sprang up, uttered the words "happy nonentity," and plunged headforemost into the river. He was observed to rise once about 200 yards below the boat, and was then seen no more. Mr. Nicholson was a young gentleman of bright literary attainments, and has left in the possession of a friend manuscripts evincing great labor and genius. He had spent a handsome fortune, but his reversionary interests were extensive.—[Courier.]

After a storm, comes a calm.—A gentleman talking to a friend on the subject of his marriage, made the following observation:—"I first saw my wife in a storm; carried her to a ball in a storm; courted her in a storm; was published to her in a storm; married her in a storm; lived with her in a storm; but thank heaven, I buried her in pleasant weather!"

Pointed.—One of our late Western Exchanges says—"The eastern papers are quite barren of interesting matters. There has not been a *riot at the East for several weeks!*"

"I always think," said a reverend guest, "that a certain quantity of wine does a man no harm after dinner." Oh no, sir," replied his host, "it is the *uncertain* quantity that does the mischief."

A Frenchman, stopping at a tavern, asked for Jacob, "There is no such person here, said the landlord. "'Tis not any person want sare, but de beer, make warm wid de poker." "Well," answered mine host, "that is flip." "Aye, yes, sare, you are in de right—I mean *Philip*."

A Dog of Spirit.—A gentleman, a good shot, lent a favorite old pointer to a friend who had not much to accuse himself of in the slaughter of patridges, however much he might have frightened them. After ineffectually firing at some birds which the old pointer had found for him, the dog turned away in apparent disgust, went home and never could be persuaded to accompany the same person afterwards.

The man who would be truly happpy must besides an habitual virture, attain to such a strength of mind as to confine his happiness within himsely, and keep it from being dependent upon others.

Legal Liars.—During the discussion of a cause in which the boundaries of a piece of land were to be ascertained, the counsel, of one part stated, "*We lie on this side*, my lord;" and the counsel on the other part said, "*We lie on this*." The chancellor stood up and said, "*If you lie on both sides*, whom will you have me to believe?"

[*From the Salem Gazette.*]

MASON AND DIXON'S LINE.—Whenever the rights interests or duties of the Northern and Southern States, respectively, are in question, reference is commonly made to "Mason and Dixon's Line."—this boundary is so termed from the names—Charles Mason and Jeremiah Dixon—of the two gentlemen who were appointed to run unfinished lines in 1761, betweeu Pennsylvania and Maryland, on the territories subjected to the heirs of Penn and Lord Baltimore. A temporary line had been run in 1739, but had not given satisfaction to the disputing parties, although it resulted from an agreement in 1739 between themselves. A decree had been made in 1682 by King James, delineating the boundaries between the lands given by charter to the first Lord Baltimore, and those adjudged to his majesty (afterwards to William Penn,) which devided the tract of land between Delaware Bay and the Eastern sea on one side, and the Chesapeake Bay on the other, by a line equally intersecting it drawn from Cape Henlopin to the 40th deg. of north latitude. A decree in chancery rendered the King's decree imparetive.—But the situation of Henlopen became long a subject of serious, protracted and expensive litigation—particularly after the death of Penn in 1718, and of Lord Baltimore in 1714; till John and Richard and Thomas Penn, (who had become the sole proprietors of the American possessions of their father William,) and Cecilius Lord Batlimore (grandson of Charles and greatgrandson of Cecilius the original patentee) entered into an agreement on the 10th of May 1732. To this agreement, a chart was appended—which ascertained the site of Cape Henlopen, and delineated a division by an east and west line running westward from that Cape to the exact middle of the peninsula.

Lord Baltimore became dissatisfied with this agreement, and he endeavored to invalidate it.—Chancery suits, kingly decrees, and proprietary arrangements followed—which eventually produced the appointment of commissioners to run the 'temporary line.' This was effected in 1739. But the cause in chancery being decided in 1750, new commissioners were appointed, who could not however, agree, and the question remained open til 1761, when the line was run by Messrs. Mason and Dixon.

Heavy Damages for Negligence.—Stilman Wooster received a few days since, in the Supreme Cour of Massachusetts, a verdict of six hundred dollars against the proprietor of the Lechmere Point Bridge, near Boston. It was an action brought to recover damages for negligence in keeping the bridge in repair, in consequence of which the plaintiff had fallen from it in the night and received injury. Judge Wilde told the jury to assess *single* damages, it being the duty of the Court to double them, agreeably to the statute. So that the defendants will be reminded to the tune of twelve hundred dollars and costs to take better heed to their ways.

The proper Sitting Posture for Females.—This question has been disputed,—one party insisting that girls should always sit erect, while others are advocates for a lounging position. It is not difficult to show that both are wrong. When a delicately formed female is supposed to be sitting erect, she is generally sitting crooked; to a superficial observer she may appear quite straight; but any one who will sit on a music stool, and endeavor to keep his body in a perpendicular line for ten minutes, will be convinced that it is difficult for even a strong man to sit as long as a delicate female is expected to do, without allowing the spine to sink on one side, or to fall forwards. The attempt to sit erect beyond a certain time is injurious: for although bending the spine occasionally is useful rather than hurtful, yet, when it is done involuntarily, and when the bend is attempted to be concealed by an endeavor to keep the head straight, there is a danger of the spine becoming twisted. Indeed, a double curve is generally the consequence: there is first a bend on one side, to give ease to the fatigued muscles; and then, to conceal this, there is a second curve, that is necessarily accomplished by a slight twist in the vertical line of the whole column. The proposal to allow the children to sit in a crooked or lounging position, seems to have been founded on the idea that all the muscles are more relaxed in this way than even when the child lies at full length on its back. This notion is certainly incorrect, and such a mode of sitting is injurious; for even were the muscles more relaxed by it, the bones and the ligaments acquire such a shape as naturally produces distortion. It may naturally be asked how a girl should sit, since it would appear, whether she is in an erect or stooping position, she is equally in danger of becoming crooked. As sitting in a manner generally recommended affords little or no support to one who is weak, the answer would be, that a delicate girl should not sit for more than five or ten minutes without having some support to her back, and when she is fatigued, that she should lie down or recline on a couch. But, as it would be very annoying to a girl not to be allowed to sit up except for a short time, and as a couch is not always at hand, we must endeavor to show how a delicate girl may remain in an upright position for a considerable time without incurring any risk of becoming crooked.—This leads to an inquiry into the merits of the chairs which are at present generally used by children.—Young ladies are often obliged, while at their music lessons, to sit upon those chairs which have high backs, long legs, and small seats. These chairs are said to have been invented by a very eminent surgeon, and are intended either to prevent distortion, by some operation, on the spine, or as the most effectual means of supporting the body. It is difficult to imagine how a chair of this description can effect the first purpose, and to understand how far it is calculated for the second, the reader should make the experiment on a chair of the same proportion to his figure, as the chair in question is to that of a little girl. He will find that if the seat or surface on which he rests is small in proportiten to his body, the chest will, after a time, either, fall forward or to one side, unless he exert himself to a degree that is very fatiguing. Indeed, if the seat be at the same time so high that the feet do not rest fairly on the ground, but dangle under the chair, a forward position of the head is almost necessary to preserve the balance of the figure. The objection to such chairs has been met with the assertion, that girls feel remarkably comfortable in them. This is no argument in favour of their use; for it is not uncommon for a girl who has seven or eight pounds of iron strapped upon her body, and next to her skin, to say the machine annoys her so little that she does not care how long she wears it. But whether this chair is agreeable or not, it is easy to show that it is not calculated to give much proper support to the body, and that it is almost impossible for a delicate girl to sit long in a natural or easy position upon it. It may be allowed that the chair we consider the most comfortable, that is, the chair which affords the most support to the body, should, if made in proper proportions, be the best for a delicate girl. In such a chair the seat should be scarcely higher than the knees, (thus permitting the whole of the foot to rest upon the floor,) and of such a size, that on sitting back, the upper part of the calves nearly touch it. This form of seat is very different from that of the chair alluded to, the back of which is equally objectionable; for, instead of being in some degree shaped to the natural curves of the spine, it is made nearly straight, and projects so as to push the head forward. A delicate girl should always sit so as to rest against the back of the chair, and if the lower part of her spine is weak, a small cushion will afford great relief.—As it is quite a mistake to suppose that the shoulders, if raised in any other way than by the action of the muscles, or by the curvature of the spine and ribs, will continue high, there is no real objection to a girl who is delicate being supported by an arm chair; for occasionally resting on the elbows, a considerable weight is taken off from that part of the spine which is the most likely to yield. These observaions refer only to the manner in which delicate girls, whose spines are still straight, should sit; when the spine is actually distorted, it will be nccessary to use other means.—[My Daughter's Book.]

Free Negro Labor.—I have already stated, that the sugar cane is cultivated by the labor of free men in Puerto Rico; I shall now bring additional proofs to show that it is cultivated elsewhere by the same means. In the island of Margarita, formerly belonging to Spain, now forming a part of the republic of Colombia, all the sugar cane is raised by free labor; and all the sugar and molasses made, and rum distilled, are produced by free laborers. It is true that the island does not produce a sufficient quantity of these articles for its own consumption, but this does not alter the question; it yields as much, or perhaps more, at present than it did when cultivated by slaves. I speak not from hearsay: I have visited that island—I have been on every plantation—and I have observed the exertions and the industry of the free laborers. I shall only offer one example in this place in corroboration of this fact. A friend of mine, an Englishman, Doctor Emery, rented an estate in Margarita, in the year 1824, from the Colombian government; it was called the Estancia, and is situate in the centre of the island, in the valley of Paraguachi.—When the island was in possession of Spain, the estate belonged to a convent of monks; and on it were from fifty to sixty slaves. The republicans drove the monks off the island; the able-bodied slaves, in order to obtain their freedom, enlisted in the victorious army, and the estate became the property of the new government. The lands were divided among a great many poor persons, who paid a rent in kind, and the whole was rented to one person, who received the rents of the under-tenants, and paid government a certain yearly sum. One of the conditions under which the tenants held these lands was that they were obliged to sell to the head landlord, at harvest time, all the canes they might have raised, at a valution. When I visited Margarita in June, 1827, there were upwards of a hundred families living on the lands, each with a comfortable cottage, a field of cane, Indian corn, and plantains, all most carefully cultivated. They worked for a shilling a day on the property of the landlord; and the young men who had no family to support, hired themselves as laborers, by the month, for about a pound sterling. They made sugar, distilled rum, and performed all the laborious work formerly done only by slaves; thus the landlord had his cane planted and cut without any trouble, and each tenant cultivated his plot of land with care, for on his industry depended the comforts of himself and family. I have heard old and intelligent neighbors say, that the estate thus cultivated produced considerably more than when in possession of the monks and worked by slaves. All the sugar cane raised on that island is cultivated precisely in the same manner. There were six stills for making rum constantly at work, managed by free laborers, and supplied with sugar and molasses from the fields of the small tenants. * * According to a calculation which is considered to be correctly made, the island of Jamaica exported in 1823, with 342,382 slaves, 1,417,758 quintals of sugar, which was a year of great fertility in the West Indies; and Puerto Rico, with 45,000 slaves, at the highest calculation produced 414,663 quintals; therefore Jamaica, with a number of slaves nearly nine times greater, yielded only about 3 1-2 times more sugar; which clearly shows that free labor in Puerto Rco, contributes largely to produce even sugar. To the number of free laborers only can this difference be attributed, for it must be acknowledged that although the soil of Jamaica is not so fertile as that of Puerto Rico, yet the cultivation of the cane is much better understood. In the same year, the three British islands of Barbadoes, St. Vincent's and Grenada, which, with the exception of Jamaica, produce most sugar of all the British Antilles, with the labor of 128,000 slaves, yielded 794,567 quintals of sugar; that is to say, that with more than three times the number of slaves, they produced less than double the quanity of sugar raised in one year in Puerto Rico. The same year the whole of the British West India colonies, with 627,000 slaves yielded only 3,005,366 quintals of sugar; which proves that with 15 1-2 times more slaves, they only produced 7 1-2 times more sugar than Puerto Rico. In 1821, 428,962 quintals of sugar, 20,758 quintals, 96 lbs. of coffee, and 1320 quintals of cotton, were produced in the island of Guadaloupe, by the labor of 87,998 slaves; while Puerto Rico, with about half the number of slaves, moderately worked and humanely treated produced, besides the quantity of sugar already stated, 25,000 quintals of coffee, 34,163 quintals of tobacco, and 9166 quintals of cotton, together with cattle, pepper, rice, and many minor productions. This simple enumeration of facts is sufficient to establish the advantages arising from, and the extent of free labor in Puerto Rico.—[Col. Flinter's Account of Puerto Rico.]

Conjugal Fidelity.—The Mandarin teal, or *een yeong* of the Chinese, is also much and justly admired. The plumage of the drake is remarkably elegant, that of the female plain and undecorated.—The male bird, however, during four months of the year, that is, from May to August, changes its beautiful plumage, and bears a close resemblance, at that time, to the female. This change is not confined solely to the tints of the feathers, but extends even to the epidermis of the mandibles. This bird, unlike the tribe, generally roosts in elevated situations upon trees, high rocks, or over the windows of the aviary. These little creatures are regarded by the Chinese as emblems of conjugal fidelity, and are usually carried about in their marriage processions. The following curious instance of fidelity was mentioned to me, as having occurred in the instance of two birds of this species:—A drake was stolen one night, with some other birds, from Mr. Beale's aviary; the beautiful male alone was taken; the poor duck, in spite of her quacks during the distressing scene, was left behind. The morning following the loss of her husband the female was seen in a most disconsolate condition, brooding in secret sorrow; she remained in a retired part of the aviary, pondering over the severe loss she had just sustained. Whilst she was thus delivering her soul to grief, a gay, prime drake, who had not long before lost his dear duck, which had been accidentally killed, trimmed his beaautiful feathers, and appearing quite handsome, pitying the forlorn condition of the bereaved, waddled towards her; and, after devoting much of his time and all his attention to the unfortunate female, he offered her his protection, and made a thousand promises to treat her with more kindness and attention than her dear, dear lost drake; she, however, rejected all his offers, having made, in audible quacks, a solemn vow to live and die a widow, if her mate did not return. From the day she met with her loss, she neglected her usual avocations; her plumage became ragged and dirty; she was regardless of appearance; forsook her food, and usual scenes of delight, where she loved to roam with him now absent, and to excite his brave spirit to drive away all the rivals that might attempt even to approach him. But those fleeting hours of enjoyment had passed, perhaps never to return; and no consolation that could be offered by any of her tribe had the least effect. Every endeavor was made to recover the lost bird, as it was not expected that the beautiful creature would be killed. Some time had elapsed after the loss, when a person, accidentally passing a hut, overheard some Chinese of the lower class conversing together; he understood sufficient of their language to find out that they said, "It would be a pity to kill so handsome a bird." "How then," said another, "can we dispose of it?" The hut was noted, as it was immediately suspected that the lost Mandarin drake was the subject of the conversation. A servant was sent, and, after some trouble, recovered the long lost drake, by paying four dollars for him. He was then brought back to the aviary in one of the usual cane cages. As soon as he recognized the aviary, he expressed his joy by quacking vehemently and flapping his wings. An interval of three weeks had elapsed since he was taken away by force; but when the forlorn duck heard the note of her lost husband, she quacked, even to screaming, with ecstacy, and flew as far as she could in the aviary to greet him on his restoration. Being let out from the cage, the drake immediately entered the aviary—the unfortunate couple were again united; they quacked, crossed necks, bathed together, and then are supposed to have related all their mutual hopes and fears during the long separation. One word more on the unfortunate widower, who kindly offered consolation to the duck when overwhelmed with grief; she in a most ungrateful manner informed her drake of the impudent and

gallant proposals he made to her during his absence. It is merely supposition that she did so; but at all events the result was, that the recovered drake attacked the other, the day subsequent to his return, pecked his eyes out, and inflicted on him so many other injuries as to occasion his death in a few days. Thus did this unfortunate drake meet with a premature and violent death for his kindness and attention to a disconsolate lady. It may perhaps be correctly written on a tablet over his grave, "*A Victim to conjugal fidelity.*"—[Bennett's Wanderings.]

Clubs in London.—In 1800 it was remarkable that London had scarcely any hotels, while all other cities were full of them; now almost every second house in the streets below Grosvernor-square is an hotel. Clubs were rare, and used by no means as clubs are now; White's, as old as Hogarth's time—Brookes's and Boodle's—The Cocoa Tree, Graham's, and another, were all. The Union, which existed within this century, was a regular gaming club, and was held first at what is now the Ordnance Office, Pall-mall, and subsequently in the house now occupied by the Bishop of Winchester, in St. James's square; but all these were clubs of recreation and amusement, of converation or dissipation. Now see the difference. Crockford's, with the best cook and coffee room, rears a splendid front, and well may, for its members are of the first class, and the aspersions cast upon it of the falsest character. The Traveller's is a magnificent house; they play high in the evenings, but no game of chance that we know of.—The Junior and Senior United Service clubs—invaluable institutions—where our gallant defenders are enabled, upon their shamefully small half pay, to enjoy the comforts and luxuries they have so gallantly earned, at an easy rate. The Union, a resort of wealthy citizens, who just fetch Charing-cross to inhale the fresh air as it draws from the Park through the funnel by Berkeley House, out of Spring Gardens, into their bay windows; and the Athenæum, where the mixture of Whigs, Radicals, savans, foreigners, dandies, authors, soldiers, sailors, lawyers, artists, doctors, and Members of both Houses of Parliament, together with an exceedingly good average supply of Bishops, renders the melange very agreeable, despite of some two or three bores who "continually dine," and who, not satisfied with getting a six-shilling dinner for three and sixpence, "continually do complain." Then there is the Wyndham Club held at Lord Blessington's house, in St. James's Square, and called after Lord Nugent, who founded it; the two University Clubs; the Clarence, mischievously called the Clearance, because it was established upon getting rid of some disagreeable members; and the Oriental Club, which, as its name implies, consists of the curry and rice gentlemen from India, with their calico shirts and limber legs, and which the young women who sweep the crossing at Tenterden street (where, *par parenthese*, there has been within this century founded a Royal Academy of Music) invariably call the Horizontal Club. All these places—and there are one or two others, especially one called the Garrick, near Covent Garden, and another in Broad-street, called "the City"—have been established upon a principle of economy, and on a scale of comfort and elegance which would have sounded like Hebrew to the unaccustomed ears of the world of 1800. The Carlton Club we have not noticed, because its splendid house in Pall-mall remains unfinished, owing to, what certainly was not known in 1800, a strike amongst the unionists. However, the Carlton is altogether a superior body, and ranks with, and perhaps above, the original White's, Brooke's, and Boodle's.—[New Monthly Magazine.]

Different Species of Egg.—The contents of these five eggs are exactly similar, with the exception of a slight difference in that of the crocodile, but slight indeed compared with the difference of the animals produced therefrom. In looking at the first egg, "could imagination," to use the words of Dr. Drummond, "ever conjure up, even in the brightest moments of inspired genius, the idea of a peacocks springing out of the shell; yet the peacock, in all the glory of dazzling colors, is the product of a little glairy fluid contained in a capsule of chalk, and in no wise different, so far as we can perceive, from what produces a barn door fowl. Has not the hand of Divinity here written, almost without a metaphor, in letters of gold, the wonders of its creative power? Look at a single feather of the peacock; consider that its shining metallic barbs, its superlatively beauterful eye, and all the wonders it exhibits of iridescent, rich, and changeable hues, according to the angle in which it lies to the light; that its form, its solidity, its inflexibility, its strength, its lightness, and all its wonders (for in the eye of intelligence every part is a wonder,) had their origin in a little mucilage; and then consider whether, in looking on such an object, we should be content with thinking no more about it than simply that it is a peacock's feather. Yet this is too much the practice. Above us, and below: on the right side, and on the left; in every element, in every situation, the works of Almighty Power are present, and all abounding in instruction of the highest kind; and that they make not the impression they should do upon us is chiefly owing to the extraordinary anomaly, that natural history forms no necessary part of the education of young or old. But if a single feather be so wonderful a production, what are we to think of the single bird." And what are we to think, I may add, of the wonderful difference between two birds, a peacock and a peahen, produced from eggs so like that the eye cannot distinguish them? Yet the peacock is furnished with a magnificent and gorgeous tail, while the pea-hen is arrayed in plain and unobtrusive colors. The second egg, which is not quite so much bulged out at the larger end, and is rather paler in color, produces the common stork, a bird very different indeed in form and in color from the peacock. The stork also feeds on frogs and garbage, while the peacock lives chiefly on grain, and in a wild state on pepper. The third egg, which is rather less taper at the small end than that of the stork, and at the same time whiter, produces the common goose; while the forth egg produces the common eagle of this country, distinguished when full grown by its white tail. No two birds could differ more than the goose and the eagle in their dispositions and mode of life, even from the very moment they are hatched. The young gosling the moment it is out of the egg, can run about and feed itself with the utmost ease and agility; while the young eaglet is blind and helpless, and must be fed for many days by its parents. The gosling will plunge fearless into the first water it sees, and will swim about as dexterously as its dam, but if an eaglet were put into a pond it would inevitably be drowned. The goose feeds on grass, while the eagle would starve rather than swallow a mouthful of it: Spallanzani could not even by an art compel an eagle to taste bread, though a goose would consider this the greatest dainty it could have. Yet the egg of the goose is very similar in all respects to the egg of the eagle, and their slight difference would not be readily detected except by a naturalist who had paid attention to the subject. The fifth egg, which produces a crocodile, though nearly of the same size as the other four, differs from them all in a few particluars, which, however, seem of too small importance, so far as external aspect goes, to indicate the extraordinary difference of the reptile from the birds. "An egg of a crocodile of fourteen feet long," says Count Lacépede, "killed in Upper Egypt in the act of laying, is preserved in the Cabinet Royale at Paris. It is whitish and of an oval figure, covered by a shell similar to that of a pullet's egg, not quite so hard, but the film or membrain lining the shell is thicker and stronger. The long diameter is two inches five lines, and the short diameter one inch eleven lines." There is within the egg a yolk and a white, as in the eggs of birds; and "if broken into a bowl," says Dr. Drummond, "no eye could perceive the difference." The young crocodile, like the gosling takes to the first water it can find; but, instead of living like the fowl, on plain vegetable diet, it prays upon every living thing it can master and devour. Though the crocodile's egg also, as we have just seen from Lacépede, is similar in size to that of the goose (some are said by M. Bory de St. Vincent to be twice as large) the crocodile hatched from it often grows five times the length of a man, with a body as thick as that of a horse, and consequently many times the size of any of the birds produced from the other four eggs.—[Renorie's Alphabet of Natural Theology.]

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

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No. 264 Elizabethstreet, near Bleecker street, New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.

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☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same. m26

MECHANICS' MAGAZINE.

THE NOVEMBER NUMBER is now ready. It contains Judge Baldwin's Address before the American Institute, verbatim, correcte i by himself; a supplemental account of articles exhibited at the Fare, and a great variety of interesting scientific intelligence, both American and European.

The Mechanics' Magazine and Register of Inventions and Improvements is published by the Proprietors, D. K. MINOR & J. E. CHALLIS, at No. 35 Wall-street, New York: in *weekly* sheets of 16 pages, at 6¼ cents—in monthly parts of 64 pages, at 31¼ cents—in volumes of 384 pages, in cloth boards, at $1.75—or at $3 per annum, in *advance*.—JOHN KNIGHT, (formerly proprietor of the London Mechanics' Magazine,) Editor.

The following encomiums on the MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS, are selected, from many others, from newspapers published in every section of the Union:

☞No respectable mechanic who feels the least interest in the manifold improvements of the age, should be without this, or some similar publication.—*Susquehannah Register.*

It ought to find its way into the house of every artizan, and no mechanic who desires to keep pace with the various improvements of the day, will be without it.—*Geneva Whig.*

There is no periodical in this country which more deserves the patronage of the mechanic than this, and which will better repay him for the expense incurred and the time spent in its perusal.—*Elmyra Gazette.*

It contains information on almost every subject connected with mechanics, and a register of inventions and improvements.—*Montreal Gazette.*

MILL DAM FOUNDRY FOR SALE,

☞ The Proprietors of the Mill Dam Foundry offer for sale or lease, their well known establishment, situated one mile from Boston. The improvements consist of

No. 1. *Boiler House*, 50 feet by 30 feet, containing all the necessary machinery for making boilers for *Locomotive* and other steam Engines.

No. 2. *Blacksmith's Shop*, 50 feet by 20, fitted with cranes for heavy work.

No. 3. *Locomotive House*, 54 feet by 25, used for putting together Locomotive Engines. Several of the best Engines in use in the United States have been put in this establishment.

No. 4. A three story brick building, covered with slate, 120 feet by 46, containing two water-wheels, equal to 40 horse power; Machine Shop, filled with lathes, &c.; Pattern Shop; Rolling Mill and Furnaces, capable of rolling 4 tons of iron per diem, exclusive of other work; three Trip Hammers, one of which is very large; Engine for blowing Cupola Furnaces, moved by water-wheel; one very superior 12 horse Steam Engine, which could be dispensed with; and a variety of other machinery.

No. 5. An Iron Foundry, 80 feet by 45, with a superior air Furnace and two Cupolas, Core oven, Cranes, &c. fitted for the largest work. Attached to the Foundry is a large warehouse, containing Patterns for the Castings of Hydraulic Presses, Locomotive and other Steam Engines, Lead Mill Rolls, Geering, Shafts, Stoves, Grates, &c. &c. These were made of the most durable materials, under the direction of a very scientific and practical Engineer, and are supposed to be of great value.

No. 6. A building, 65 feet by 36, containing a large stock of chimneys, and furnaces, for making Cast Steel. This building is at present used as a boarding-house, and can accommodate a large number of men.

No. 7. A range of buildings, 200 feet long by 36, containing counting room, several store rooms, a Brass Foundry, room for cleaning castings, a large loft for storing patterns, stable for two horses, &c. &c.

The above establishment being on tide water, presents greater advantages for some kinds of business than any other in the United States. Coal and Iron can be carried from vessels in the harbors of Boston, to the wharf in front of the Factory, at 25 to 30 cents per ton. Some of the largest jobs of Iron work have been completed at this estublishment; among others, the great chain and lift pumps for freeing the Dry Dock at the Navy Yard Charleston.

The situation for Railroad work is excellent, being in the angle formed by the crossing of the Providence and Worcester Railroads. The Locomotive "Yankee," now running on the latter road, and the "Jonathan," purchased by the State of Pennsylvania, were built at these works. With the Patterns and Machinery now in the premises, 12 Locomotives and as many tenders, besides a great quantity of cars and waggons, could be made per annum.

For terms, apply to

THOS. J. ECKLEY, Treas', &c., Boston, or to
ROBERT RALSTON, Jr., Philadelphia.

Boston, Dec. 20, 1834.

PATENT HAMMERED SHIP, BOAT, AND RAILROAD SPIKES.

☞ Railroad Spikes of every description required, made at the Albany Spike Factory.

Spikes made at the above Factory are recommended to the public as superior to any thing of the kind now in use.

Ship and Boat Spikes made full size under the head, so as not to admit water.

Orders may be addressed to Messrs. ERASTUS CORNING & CO., Albany, or to THOMAS TURNER, at the Factory, Troy, N. Y. sept.13-1 y

☞ TOWNSEND & DURFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833.

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

RAILROAD AND CANAL MAP.

THIS long promised Map is now ready for those who wish it. Its size is 24 by 40 inches. It is put up in a convenient pocket form, in morocco covers, and accompanied by over 70 pages of letter press, giving a concise description of, or reference to, each Road and Canal delineated on the Map. It will also be put up in *Marble Paper* covers, so as to be forwarded by mail to any part of the country; the postage of which, cannot exceed 44, and probably not 25 cents, to any part of the county.

Published at 35 Wall street, N. Y., by
a12 tf D. K. MINOR & J. E. CHALLIS.

AGENTS FOR NEW PUBLICATIONS.

HENRY G. WOODHULL, of Wheatland, Monroe county, New York, is agent for the following Publications:

The New York American Daily, at $10.00—Tri-Weekly, at $5.00—Semi-Weekly, at $4.00 in advance.

The American Railroad Journal, Weekly, at $3.00 per annum.

The Mechanics' Magazine, two volumes a year, at $3.00 per annum.

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The Ladies' Companion, of 54 pages a month, at $3.00 per annum, in advance.

The Rochester Gem, at $1.50 in advance.

All Communications addressed to me, at Wheatland, Monroe county, will be promptly attended to. September 19, 1834.

ALBANY SEED STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, *warranted* of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures here after, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

ALSO—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of *Farmers*.

W. THORBURN,
347 N. Market st. (opposite Post Office.

☞ Catalogues may be had at the Store; if sent for by mail will be forwarded gratis. Orders solicited early, as the better ustice can be done in the execution.

*** Mr. Thorburn is also Agent for the following publications to wit:—NEW YORK FARMER and American Gardener's Magazine; MECHANICS' MAGAZINE and Register of Inventions and Improvements; AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the NEW-YORK AMERICAN, *Daily, Tri-Weekly*, and *Semi-Weekly*: *either* or *all* of which may be seen and obtained by those who wish them, by calling at 347 *North Market street, Albany*. tf

TO RAILROAD COMPANIES.

☞ The subscriber having erected extensive machinery for the manufacture of the Iron Work for Railroad Cars, and having made arrangements with Mr. Phineas Davis, patentee of the celebrated wire chilled wheels, will enable him to fit up at short notice any number of cars which may be wanted.

The superiority of the above Wheels has been fully tested on the Baltimore and Ohio Railroad, where they have been in constant use for some months past. Having fitted up Wheels for six hundred Cars, the subscriber flatters himself that he can execute orders in the above line to the satisfaction of persons requiring such work. The location of the shop being on the tide-waters of the Chesapeake Bay, will enable him to ship the work to any of the Atlantic ports, on as reasonable terms as can be offered by any person. All orders will be executed with despatch, and the work warranted. When there are but a few setts wanted, the chills and patterns are to be furnished, or the company pay the expense of making the same, and if required, will be sent with the wheels. All Wheels furnished and fitted by the subscriber will have no extra charge on account of the patent right.

Samples of the above Wheels, which have been broken to show their superiority, may be seen at the office of the Railroad Journal; at the Depot of the Boston and Providence Railroad, Boston; and at John Arnold's shop, near the Broad street House, Philadelphia. All orders directed to J. W. & E. PATTERSON, Baltimore, or to the subscriber, Joppa Mills, Little Gunpowder Post-Office, Baltimore county, Maryland, will be attended to. DEAN WALKER. a3

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Tro N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

j23 1am H. BURDEN.

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

Fr further information on this subject see No. 49, pag 772, Vol. 2, of Railroad Journal.

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ¾ inch, *Flat Bars* in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
260 do. 1½ do. ¾ do.
40 do. 1¾ do. ¾ do.
800 do. 2 do. ¾ do.
800 do. 2½ do. ¾ do.
soon expected.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels

Axles of 2⅛, 2¼, 2⅜, 3, 3⅛, 3¼, and 3½ inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

SURVEYING AND ENGINEERING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.
m1 1y Germant. and Norrist. Railroad.